

Lake Calumet Cluster Site

Data Usability Summary Report

Chicago, IL

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls, Metals, and Miscellaneous General Chemistry Analyses

SDG #s: 500-110798, 500-110872, and 500-110948

Analyses Performed By: TestAmerica Laboratories Chicago, IL

Report #: 25711R Review Level: Tier III

Project: CI001805.0003.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 500-110798, 500-110872, and 500-110948 for samples collected in association with the Lake Calumet Cluster Site in Chicago, Illinois. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample		Analysis		is		
SDG	Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	svoc	Pest PCBs	Metals	Misc
	MW-3-GW-04272016	500-110798-1	Water	4/27/2016		Χ	Χ	Х	Х	Χ
500-110798	MW-4-GW-04272016	500-110798-2	Water	4/27/2016		Х	Χ	Х	Х	Χ
	MW-5-GW-04272016	500-110798-3	Water	4/27/2016		Χ	Χ	Х	Χ	Χ
	MW-1-GW-04282016	500-110872-1	Water	4/28/2016		Χ	Χ	Х	Χ	Χ
	MW-13-GW-04282016	500-110872-2	Water	4/28/2016		Χ	Χ	Х	Х	Х
500-110872	MW-12-GW-04282016	500-110872-3	Water	4/28/2016		Х	Χ	Х	Х	Χ
	MW-11-GW-04282016	500-110872-4	Water	4/28/2016		Χ	Х	Х	Х	Х
	DUP-1(04282016)	500-110872-5	Water	4/28/2016	MW-13- GW	Х	Х	Х	Х	Х
	MW-2-GW-04282016	500-110948-1	Water	4/28/2016		Χ	Χ	Х	Χ	Χ
	MW-10-GW-04292016	500-110948-2	Water	4/29/2016		Х	Χ	Х	Х	Χ
	MW-6-GW-04292016	500-110948-3	Water	4/29/2016		Χ	Χ	Х	Χ	Х
500-110948	MW-7-GW-04292016	500-110948-4	Water	4/29/2016		Χ	Х	Х	Х	Х
10010	MW-9-GW-04292016	500-110948-5	Water	4/29/2016		Χ	Х	Х	Х	Х
	MW-8-GW-04292016	500-110948-6	Water	4/29/2016		Х	Х	Х	Х	Х
	DUP-2 (04292016)	500-110948-7	Water	4/29/2016	MW-6- GW	Х	Х	Х	Х	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

		Reported		Performance Acceptable		Not
	Items Reviewed	No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	Master tracking list		Х		Х	
4.	Methods of analysis		Х		Х	
5.	Reporting limits		Х		Х	
6.	Sample collection date		Х		Х	
7.	Laboratory sample received date		Х		Х	
8.	Sample preservation verification (as applicable)		Х		Х	
9.	Sample preparation/extraction/analysis dates		Х		Х	
10.	Fully executed Chain-of-Custody (COC) form		Х		Х	
11.	Narrative summary of QA or sample problems provided		Х		Х	
12.	Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8081B, 8082A, 8260B, and 8270D. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

Concentration (C) Qualifiers

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

Quantitation (Q) Qualifiers

- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.

Validation Qualifiers

- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- UB Compound considered non-detect at the listed value due to associated blank contamination.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Stri QC serves to increase confidence in data but any value potentially contains error.	ict

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES INCLUDING TOTAL VOLATILE PETROLEUM HYDROCARBONS (TPHG)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a compound detected in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99, and a RRF value greater than control limit (0.05).

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial / Continuing	Compound	Criteria
		2-Butanone (MEK)	-21.8 %
SDG 500-110798		4-Methyl-2-Pentanone (MIBK)	-24.2 %
MW-3-GW-04272016	CCV %D	Carbon Tetrachloride	+28.3 %
MW-4-GW-04272016	CCV %D	Methyl acetate	-21.4 %
MW-5-GW-04272016		Methyl N-Butyl Ketone (2-Hexanone)	-21.9 %
		Trichlorofluoromethane (CFC-11)	+28.8 %
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-12-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	CCV %D	Bromomethane	-38.8 %
		1,2-Dibromo-3-chloropropane (DBCP)	-29.5 %
		2-Butanone (MEK)	-22.7 %
		4-Methyl-2-Pentanone (MIBK)	-26.8 %
SDG 500-110948	CCV %D	Bromoform	-21.4 %
MW-2-GW-04282016		Dichlorodifluoromethane (CFC-12)	-22.1 %
		Chlorodibromomethane	-20.3 %
		Chloromethane	-21.8 %
		Methyl N-Butyl Ketone (2-Hexanone)	-24.1 %
SDG 500-110948		1,2-Dibromo-3-chloropropane (DBCP)	-23.3 %
MW-10-GW-04292016 MW-6-GW-04292016		2-Butanone (MEK)	-21.1 %
MW-7-GW-04292016	CCV %D	4-Methyl-2-Pentanone (MIBK)	-20.2 %
MW-9-GW-04292016 MW-8-GW-04292016		Bromoform	-22.1 %
DUP-2 (04292016)		Methyl N-Butyl Ketone (2-Hexanone)	-22.0 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification	
	RRF < 0.05	Non-detect	R	
	KKF < 0.05	Detect	J	
Initial and Continuing	RRF < 0.01 ¹	Non-detect	R	
Calibration	KKF < 0.01	Detect	J	
	RRF > 0.05 or RRF > 0.01 ¹	Non-detect	No Action	
	RRF > 0.03 0 RRF > 0.01	Detect		
Initial Calibration	%RSD > 15% or a	Non-detect	UJ	
Initial Calibration	correlation coefficient < 0.99	Detect	J	
	%D > +20%	Non-detect	No Action	
Continuing Colibration	(increase in sensitivity)	Detect	J	
Continuing Calibration	%D < -20%	Non-detect	UJ	
	(decrease in sensitivity)	Detect	J	

¹ RRF of 0.01 only applies to typically poor responding compounds (e.g. ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Surrogate	Recovery
	Dibromofluoromethane	< LL but > 10%
<u>SDG 500-110872</u> MW-1-GW-04282016	1,2-Dichloroethane-d₄ Toluene-d₃ 4-Bromofluorobenzene	Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> III (Upper Central Limit)	Non-detect	No Action
> UL (Upper Control Limit)	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
LE (LOWER CONTROL EITHER) But > 10%	Detect	J
< 10%	Non-detect	R
1076	Detect	J

Control Limit	Sample Result	Qualification
D - Surrogates diluted below the calibration curve	Non-detect	UJ^1
D - Surrogates diluted below the calibration curve	Detect	J^1

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC analysis exhibit area counts that are within a factor of two (i.e. 50% - 200%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations MW-3-GW-04272016, MW-2-GW-04282016, and MW-8-GW-04292016 were used in the MS/MSD analyses. Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Compound	MS Recovery	MSD Recovery
<u>SDG 500-110798</u> MW-3-GW-04272016	Trichlorofluoromethane (CFC-11)	> UL	Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper central limit (LIL)	Non-detect	No Action
> the upper control limit (UL)	Detect	J
the lower central limit (LL) but > 100/	Non-detect	UJ
< the lower control limit (LL) but > 10%	Detect	J
- 100/	Non-detect	R
< 10%	Detect	J

Control Limit	Sample Result	Qualification
Parent sample concentration > 4x the MS/MSD spike	Detect	No Action
concentration.	Non-detect	NO ACTION

Sample locations associated with MS/MSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Location	Compounds
<u>SDG 500-110948</u> MW-8-GW-04292016	Bromomethane Dichlorodifluoromethane (CFC-12) Chloroethane Chloromethane Methyl-tert-butylether (MTBE) Trichlorofluoromethane (CFC-11) Vinyl chloride

The criteria used to evaluate the RPD between the MS and MSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
>111	Non-detect	UJ
> UL	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872	Ethylbenzene	2500	1900	27.3 %
MW-13-GW-04282016 /	Styrene (Monomer)	10 U	120	NC
DUP-1(04282016)	Toluene	8100	4600	55.1 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Total Xylenes	17000	14000	19.4 %
	cis-1,2-Dichloroethene	54	26	70.0 %
	Acetone	85	50 U	AC
SDG 500-110872	Benzene	630	450	33.3 %
MW-13-GW-04282016 /	Vinyl chloride	15	7.1	AC
DUP-1(04282016)	1,1-Dichloroethane	52	23	77.3 %
	2-Butanone (MEK)	60	50 U	AC
	1,2-Dichlorobenzene	17	14	19.4 %
	Isopropylbenzene	97	110	12.6 %
	Ethylbenzene	100	97	3.0 %
	1,4-Dichlorobenzene	13	13	0.0 %
	1,2-Dichloroethane	1.4	1.4	0.0 %
	4-Methyl-2-Pentanone	27	27	0.0 %
	Methylcyclohexane	1.1	1.1	0.0 %
	Toluene	160	150	6.5 %
SDG 500-110948	Total Xylenes	380	440	14.6 %
MW-6-GW-04292016 /	cis-1,2-Dichloroethene	4.7	4.5	4.3 %
DUP-2 (04292016)	Acetone	33	30	9.5 %
	Benzene	7.0	7.0	0.0 %
	Vinyl chloride	4.1	3.7	10.3 %
	1,1-Dichloroethane	0.51 J	1.0 U	AC
	2-Butanone (MEK)	14	13	7.4 %
	1,2-Dichlorobenzene	2.4	2.5	4.1 %
	Isopropylbenzene	6.7	6.6	1.5 %

The styrene, 1,1-dichloroethane, cis-1,2-dichloroethene, and toluene results for field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited RPDs greater than the control limit. The styrene, 1,1-dichloroethane, cis-1,2-dichloroethene, and toluene results for MW-13-GW-04282016 and DUP-1(04282016) were therefore qualified as estimated.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ± 0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria. Sample results associated with compounds that exhibited concentrations greater than the linear range of the instrument calibration or were reported from a dilution analysis are summarized in the following table.

Sample ID	Compound	Original Result	Diluted Result	Reported Result
MW-4-GW-04272016	Benzene		250	250 D

Sample ID	Compound	Original Result	Diluted Result	Reported Result
	Ethylbenzene		42	42 D
	Toluene		280	280 D
MW-3-GW-04272016	Total Xylenes		290	290 D
	Benzene		490	490 D
	1,1-Dichloroethane		52	52 D
	1,2-Dichlorobenzene		17	17 D
	2-Butanone (MEK)		60	60 D
	Acetone		85	85 D
	Benzene		630	630 D
MW-13-GW-04282016	cis-1,2-Dichloroethene		54	54 D
	Ethylbenzene		2500	2500 D
	Isopropylbenzene		97	97 D
	Toluene		8100	8100 D
	Total Xylenes		17000	17000 D
	Vinyl chloride		15	15 D
	1,1-Dichloroethane		3300	3300 D
	1,1-Dichloroethene		10	10 D
	2-Butanone (MEK)		2700	2700 D
	4-Methyl-2-Pentanone		24000	24000 D
	Acetone		4800	4800 D
	Benzene		160	160 D
	Chloroethane		26	26 D
	cis-1,2-Dichloroethene		1100	1100 D
MW-12-GW-04282016	Dichloromethane		6300	6300 D
	Ethylbenzene		3400	3400 D
	Isopropylbenzene		43	43 D
	Tetrachloroethene		680	680 D
	Toluene		11000	11000 D
	Total Xylenes		19000	19000 D
	trans-1,2-Dichloroethene		23	23 D
	Trichloroethene		720	720 D
	Vinyl chloride		420	420 D
MW-11-GW-04282016	Total Xylenes		620	620 D
	1,1-Dichloroethane		23	23 D
DUP-1(04282016)	1,2-Dichlorobenzene		14	14 D
DOF - 1(04202010)	Benzene		450	450 D
	cis-1,2-Dichloroethene		26	26 D

Sample ID	Compound	Reported Result		
	Ethylbenzene		1900	1900 D
	Isopropylbenzene		110	110 D
DUD 1/04292016)	Styrene (Monomer)		120	120 D
DUP-1(04282016)	Toluene		4600	4600 D
	Total Xylenes		14000	14000 D
	Vinyl chloride		7.1	7.1 D
MW-2-GW-04282016	Chlorobenzene		660	660 D
MW-6-GW-04292016	Total Xylenes		380	380 D
MW 7 CW 04202016	Toluene		410	410 D
MW-7-GW-04292016	Total Xylenes		760	760 D
DUP-2 (04292016)	Total Xylenes		440	440 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result < the calibration range	DJ
Diluted sample result > the calibration range	EDJ
Original sample result > the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Rep	orted	Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETR	Y (GC/MS	5)			
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment/Field blanks					Х
C. Trip blanks					Х
Laboratory Control Sample (LCS) Accuracy (%R)		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R	Х				Х
LCS/LCSD Precision (RPD)	Х				Х
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		Х	
MS/MSD Precision RPD		Х	Х		
Field/Laboratory Duplicate Sample RPD		Х	Х		
Surrogate Spike %R		Х	Х		
Dilution Factor		Х		Х	
Moisture Content					Х
Tier III Validation					
System performance and column resolution		Х		Х	
Initial calibration %RSDs		Х		Х	
Continuing calibration RRFs		Х		Х	
Continuing calibration %Ds		Х	Х		
Instrument tune and performance check		Х		Х	
Ion abundance criteria for each instrument used		Х		Х	
Internal standard		Х		Х	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		Х		Х	
B. Quantitation Reports		Х		Х	
C. RT of sample compounds within the established RT windows		Х		Х	
D. Quantitation transcriptions/calculations		Х		Х	
E. Reporting limits adjusted for sample dilutions		Х		Х	

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation

%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution are acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial/Continuing	Compound	Criteria
	ICV %RSD	Benzaldehyde	28.9 %
		2,2-Oxybis(1-Chloropropane)	+24.0 %
SDG 500-110798		2-Methyl-4,6-dinitrophenol	+21.1 %
MW-3-GW-04272016		2-Nitroaniline	+26.0 %
MW-4-GW-04272016	CCV %D	4-Chloroaniline	+25.2 %
MW-5-GW-04272016		Carbazole	+26.8 %
		Hexachlorocyclopentadiene	-54.1 %
		Indeno(1,2,3-cd)pyrene	+41.6 %
	ICV %RSD	Benzaldehyde	41.4 %
	ICV %D	4-Chloroaniline	-62.9 %
	CCV %D	2,2-Oxybis(1-Chloropropane)	-22.1 %
<u>SDG 500-110872</u> MW-11-GW-04282016		3-Nitroaniline	+38.1 %
DUP-1(04282016)		4-Nitroaniline	+23.8 %
		Benzaldehyde	+38.6 %
		Carbazole	+32.2 %
		Hexachlorocyclopentadiene	-58.3 %
	ICV 0/ DCD	Benzaldehyde	52.1 %
	ICV %RSD	Hexachlorocyclopentadiene	34.7 %
	ICV %D	4-Chloroaniline	-47.7 %
SDG 500-110872	ICV %D	3-Nitroaniline	-32.7 %
MW-1-GW-04282016 MW-13-GW-04282016		2,4-Dinitrophenol	+20.5 %
MW-12-GW-04282016		4-Nitroaniline	+41.0 %
	CCV %D	Benzaldehyde	+38.0 %
		Hexachlorocyclopentadiene	+41.3 %
		Pentachlorophenol	+29.7 %
SDG 500-110948	ICV %RSD	Benzaldehyde	48.4%
MW-9-GW-04292016	CCV %D	4-Chloroaniline	+22.2 %

Sample Location	Initial/Continuing	Compound	Criteria
SDG 500-110948 MW-2-GW-04282016		2,2-Oxybis(1-Chloropropane)	+24.9 %
MW-10-GW-04292016	001/0/5	Benzaldehyde	-95.8 %
MW-6-GW-04292016 MW-7-GW-04292016	CCV %D	Dibenzo(a,h)anthracene	+22.0 %
MW-8-GW-04292016 DUP-2 (04292016)		Indeno(1,2,3-cd)pyrene	+24.1 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification	
	RRF < 0.05	Non-detect	R	
	KKF < 0.05	Detect	J	
Initial and Continuing	RRF < 0.01 ¹	Non-detect	R	
Calibration	KKF < 0.01	Detect	J	
	RRF > 0.05 or RRF > 0.01 ¹	Non-detect	No Action	
	RRF > 0.05 0 RRF > 0.01	Detect	NO ACTION	
Initial Calibration	%RSD > 20% or a correlation	Non-detect	UJ	
Initial Calibration	coefficient < 0.99	Detect	J	
	%D > 20%	Non-detect	No Action	
	(increase in sensitivity)	Detect	J	
Continuing Calibration	%D > 20%	Non-detect	UJ	
	(decrease in sensitivity)	Detect	J	
	%D > 90% (increase or decrease	Non-detect	R	
	in sensitivity)	Detect	J	

RRF of 0.01 only applies to typically poor responding compounds (e.g. anilines, nitrophenols, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits, and that all SVOC surrogate recoveries be greater than ten percent.

Sample locations associated with surrogates that exhibited recoveries outside of the control limits are presented in the following table.

Sample Location	Surrogate	Recovery
<u>SDG 500-110872</u> MW-12-GW-04282016	All surrogates	D (diluted out)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of surrogate deviations, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
) OL	Detect	J
211 but > 100/	Non-detect	UJ
< LL but > 10%	Detect	J
< 100/	Non-detect	R
< 10%	Detect	J
D. Curregates diluted below the calibration curve	Non-detect	UJ ¹
D - Surrogates diluted below the calibration curve	Detect	J ¹

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

The internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Location	Internal Standard	Response
<u>SDG 500-110798</u> MW-4-GW-04272016	1,4-Dichlorobenzene-d₄ Naphthalene-d₃ Acenaphthene-d₁₀ Phenanthrene-d₁₀ Chrysene-d₁₂	Acceptable
	Perylene-d ₁₂	< LL but > 25%

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
> the upper control limit (OL)	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
the lower control limit (LL) but > 25%	Detect	J

Control limit	Sample Result	Qualification
250/	Non-detect	R
< 25%	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample location from within these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit recoveries and relative percent differences (RPDs) between the LCS and LCSD results within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analyses exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Compound	LCS Recovery	LCSD Recovery
<u>SDG 500-110798</u> MW-3-GW-04272016	Hexachloroethane Hexachloro-1,3-butadiene	< LL but > 10 %	< LL but > 10 %
MW-4-GW-04272016 MW-5-GW-04272016	Hexachlorocyclopentadiene	< 10 %	< 10 %
SDG 500-110948 MW-2-GW-04282016 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-9-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	Benzaldehyde	> UL	> UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of any LCS deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper central limit (III.)	Non-detect	No Action
> the upper control limit (UL)	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
the lower control limit (LL) but > 10 %	Detect	J
< 10%	Non-detect	R
10/0	Detect	J

Sample locations associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Location	Compound
SDG 500-110948 MW-2-GW-04282016 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-9-GW-04292016 MW-8-GW-04292016	2,4-Dimethylphenol 4-Chloroaniline
DUP-2 (04292016)	

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> 111	Non-detect	UJ
> UL	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	2,4-Dimethylphenol	37 J	40 J	7.8 %
	4-Methylphenol	210	280	28.6 %
	Phenol	56	84	40.0 %
	Acenaphthylene	4.5	5.1 J	12.5 %
	Isophorone	5.4 J	16 U	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Acenaphthene	1.4 J	8.1 U	AC
	Diethyl phthalate	33	31	6.3 %
	Di-n-butyl phthalate	5.5 J	40 U	AC
	N-nitrosodiphenylamine	14	15	6.9 %
<u>SDG 500-110872</u> MW-13-GW-04282016 /	Fluorene	1.8 J	8.1 U	AC
DUP-1(04282016)	Pentachlorophenol	65 J	160 U	AC
	Naphthalene	250	260	3.9 %
	2-Methylnaphthalene	22	20	9.5 %
	1,1-Biphenyl	3.1 J	3.2 J	3.2 %
	2-Methylphenol	8.1 U	14 J	AC
	2,4-Dimethylphenol	110	110	0.0 %
	4-Methylphenol	96	90	6.5 %
<u>SDG 500-110948</u> MW-6-GW-04292016 / DUP-2 (04292016)	Phenol	40 J	38 J	5.1 %
	bis(2-Ethylhexyl)phthalate	85 J	88	3.5 %
	Naphthalene	16	16	0.0 %
	2-Methylnaphthalene	4.3 U	6.6	AC
	2-Methylphenol	20	19	5.1 %

AC Acceptable

J Estimated (result is < RL)

U Not detected

The phenol results for field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited a RPD greater than the control limit. The phenol results for MW-13-GW-04282016 and DUP-1(04282016) have been qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria. Sample results associated with compounds that exhibited concentrations greater than the linear range of the instrument calibration or were reported from a dilution analysis are summarized in the following table.

Sample ID	Compound	Original Result	Diluted Result	Reported Result
	1,1-Biphenyl		38	38 D
	2,4-Dimethylphenol		280	280 D
MW-3-GW-04272016	2-Methylnaphthalene		360	360 D
	2-Methylphenol		180	180 D
	4-Methylphenol		280	280 D
	Acenaphthene		29	29 D
	Acenaphthylene		3.7 J	3.7 JD
	Anthracene		12	12 D

Sample ID	Compound	Original Result	Diluted Result	Reported Result
	Carbazole		140	140 D
	Dibenzofuran		56	56 D
	Fluoranthene		7.1	7.1 D
MW-3-GW-04272016	Fluorene		83	83 D
10100-3-600-04272010	Naphthalene		3600	3600 D
	Phenanthrene		69	69 D
	Phenol		85	85 D
	Pyrene		4.7	4.7 D
MW-1-GW-04282016	Naphthalene	150 E		150 EJ
	1,1-Biphenyl		3.1 J	3.1 JD
	2,4-Dimethylphenol		37 J	37 JD
	2-Methylnaphthalene		22	22 D
	4-Methylphenol		210	210 D
	Acenaphthene		1.4 J	1.4 JD
	Acenaphthylene		4.5	4.5 D
MW-13-GW-04282016	Diethyl phthalate		33	33 D
10100-13-600-04202010	Di-n-butyl phthalate		5.5 J	5.5 JD
	Fluorene		1.8 J	1.8 JD
	Isophorone		5.4 J	5.4 JD
	Naphthalene		250	250 D
	N-nitrosodiphenylamine		14	14 D
	Pentachlorophenol		65 J	65 JD
	Phenol		56	56 D
	2-Methylnaphthalene		46	46 D
	2-Methylphenol		7600	7600 D
	4-Methylphenol		510000	510000 D
MW-12-GW-04282016	Isophorone		19000	19000 D
	Naphthalene		160	160 D
	Pentachlorophenol		1200 J	1200 JD
	Phenol		4000	4000 D
	1,1-Biphenyl		19 J	19 JD
	2,4-Dimethylphenol		16 J	16 JD
	2-Methylnaphthalene		2.9 J	2.9 JD
MW-11-GW-04282016	4-Methylphenol		180	180 D
	bis(2-Chloroethoxy)methane		3.8 J	3.8 JD
	Naphthalene		8.0	8.0 D
	Phenol		31 J	31 JD

Sample ID	Compound	Original Result	Diluted Result	Reported Result
	1,1-Biphenyl		3.2 J	3.2 JD
	2,4-Dimethylphenol		40 J	40 JD
	2-Methylnaphthalene		20	20 D
	2-Methylphenol		14 J	14 JD
DUD 1/04292016)	4-Methylphenol		280	280 D
DUP-1(04282016)	Acenaphthylene		5.1 J	5.1 JD
	Diethyl phthalate		31	31 D
	Naphthalene		260	260 D
	N-nitrosodiphenylamine		15	15 D
	Phenol		84	84 D
NAVA 0 00M 04000040	2-Methylnaphthalene		120	120 D
MW-2-GW-04282016	Naphthalene		90	90 D
	2,4-Dimethylphenol		110	110 D
	2-Methylphenol		20	20 D
NAMA O OMA O 400004.0	4-Methylphenol		96	96 D
MW-6-GW-04292016	bis(2-Ethylhexyl)phthalate		85 J	85 JD
	Naphthalene		16	16 D
	Phenol		40 J	40 JD
	2,4-Dimethylphenol		470	470 D
	2-Methylnaphthalene		9.4	9.4 D
	2-Methylphenol		78	78 D
	4-Methylphenol		280	280 D
	Anthracene		2.8 J	2.8 JD
NAVA 7 CVM 0400004C	bis(2-Ethylhexyl)phthalate		290	290 D
MW-7-GW-04292016	Carbazole		4.8 J	4.8 JD
	Fluoranthene		8.8	8.8 D
	Fluorene		3.2 J	3.2 JD
	Naphthalene		48	48 D
	Phenanthrene		14	14 D
	Pyrene		8.0 J	8.0 JD
	2,4-Dimethylphenol		110	110 D
	2-Methylnaphthalene		6.6	6.6 D
	2-Methylphenol		19	19 D
DUP-2 (04292016)	4-Methylphenol		90	90 D
	bis(2-Ethylhexyl)phthalate		88	88 D
	Naphthalene		16	16 D
	Phenol		38 J	38 JD

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result < the calibration range	DJ
Diluted sample result > the calibration range	EDJ
Original sample result > the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)				
Tier II Validation					
Holding Times		Х		Х	
Reporting Limits (units)		Х		Х	
Blanks					•
A. Method Blanks		Х		Х	
B. Equipment/Field Blanks					Х
Laboratory Control Sample (LCS) Accuracy (%R)		Х	Х		
Laboratory Control Sample Duplicate (LCSD) %R		Х	Х		
LCS/LCSD Precision (RPD)		Х	Х		
Matrix Spike (MS) %R	Х				Х
Matrix Spike Duplicate (MSD) %R	Х				Х
MS/MSD RPD	Х				Х
Field Duplicate Sample RPD		Х		Х	
Surrogate Spike %R		Х	Х		
Dilution Factor		Х		Х	
Moisture Content					Х
Tier III Validation					
System Performance and Column Resolution		Х		Х	
Initial Calibration %RSDs		Х	Х		
Continuing Calibration RRFs		Х		Х	
Continuing Calibration %Ds		Х	Х		
Instrument Tune and Performance Check		Х		Х	
Ion Abundance Criteria for Each Instrument Used		Х		Х	
Internal Standards		Х	Х		
Compound Identification and Quantitation		•		1	•
A. Reconstructed Ion Chromatograms		Х		Х	
B. Quantitation Reports		Х		Х	
C. RT of Sample Compounds Within the Established RT Windows		Х		х	
D. Quantitation transcriptions/calculations		Х		Х	
E. Reporting Limits Adjusted for Sample Dilutions %R Percent Recovery		Х	Х		

%R

Percent Recovery
Relative Percent Difference RPD %RSD Relative Standard Deviation

Percent Difference %D

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

All target analytes associated with the initial calibration standards must exhibit a relative standard deviation (RSD) less than the method-specified control limit of 20% or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration Verification (CCV)

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the method-specified control limit of 15%.

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Location	Surrogate	Recovery
SDG 500-110948	Tetrachloro-m-xylene (TCMX)	Acceptable (93%)
MW-7-GW-04292016	Decachlorobiphenyl (DCB)	< 10%
SDG 500-110872	Tetrachloro-m-xylene (TCMX)	> UL
DUP-1(04282016)	Decachlorobiphenyl (DCB)	< LL but > 10%

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper central limit (LIL)	Non-detect	No Action
> the upper control limit (UL)	Detect	J
the lower central limit (LL) but > 109/	Non-detect	UJ
< the lower control limit (LL) but > 10%	Detect	J
< 10%	Non-detect	R
< 10%	Detect	J
One surrogate exhibiting recovery outside the control	Non-detect	No Action
limits but > 10%	Detect	NO ACION
Surragates diluted (D) helpy the colibration curve	Non-detect	J ¹
Surrogates diluted (D) below the calibration curve	Detect	J.

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample location from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
<u>SDG 500-110872</u> MW-13-GW-04282016 / DUP-1(04282016)	All analytes	U	U	AC
<u>SDG 500-110948</u> MW-6-GW-04292016 / DUP-2 (04292016)	All analytes	U	U	AC

AC Acceptable

The field duplicate samples exhibited acceptable results.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) between the detected analyte results calculated on each column must be less than 40%.

All sample results exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

U Not detected

DATA VALIDATION CHECKLIST FOR PESTICIDES

Pesticides: SW-846 8081B		Reported		Performance Acceptable	
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks					
Laboratory Control Sample (LCS) Accuracy (%R)		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R	Х				Х
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD RPD	Х				Х
Laboratory Duplicate Sample RPD	X				Х
Field Duplicate Sample RPD		Х		Х	
Surrogate Spike %R		Х	Х		
Column %D ≤ 40% (If dual column is performed for reporting-not confirmation)		Х		Х	
Dilution Factor		Х		Х	
Moisture Content					Х
Tier III Validation		· L		I	
Initial calibration %RSDs		Х		Х	
Continuing calibration %Ds		Х		Х	
System performance and column resolution		Х		Х	
Analyte identification and quantitation					
A. Quantitation Reports		Х		Х	
B. RT of sample analytes within the established RT windows		Х		Х	
C. Identification/Confirmation		Х		Х	
D. Quantitation transcriptions/calculations		Х		Х	
E. Reporting limits adjusted for sample dilutions		Х		Х	
%R Percent recovery	L	1			

%R Percent recovery
%RSD Relative standard deviation
RPD Relative percent difference
%D Percent difference

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target analytes associated with the initial calibration standards must exhibit a relative standard deviation (RSD) less than the method-specified control limit of 20% or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Location	Surrogate	Recovery
<u>SDG 500-110948</u> MW-7-GW-04292016	Tetrachloro-m-xylene (TCMX) Decachlorobiphenyl (DCB)	< LL but > 10%
MW-7-GW-04292016 (re-extraction)	Tetrachloro-m-xylene (TCMX) Decachlorobiphenyl (DCB)	< 10%

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below. The initial analytical results for MW-7-GW-04292016 were retained in preference to the re-extraction results.

Control Limit	Sample Result	Qualification	
> the upper central limit (LIL)	Non-detect	No Action	
> the upper control limit (UL)	Detect	J	
the lower central limit (LL) but > 100/	Non-detect	UJ	
< the lower control limit (LL) but > 10%	Detect	J	
< 10%	Non-detect	R	
< 10%	Detect	J	
One surrogate exhibiting recovery outside the control	Non-detect	No Action	
limits but > 10%	Detect	NO ACION	
Surrogates diluted below	Non-detect	J ¹	
the calibration curve	Detect	J.	

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample location within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS analyses exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. The QAPP-specified control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices.

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
<u>SDG 500-110872</u> MW-13-GW-04282016 / DUP-1(04282016)	All analytes	U	U	AC
<u>SDG 500-110948</u> MW-6-GW-04292016 / DUP-2 (04292016)	Aroclor 1232	6.5	5.7	13.1 %

AC Acceptable U Not detected

The field duplicate samples exhibited acceptable results.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the RPD between the detected analyte results calculated from each column must be less than 40%. For analytes that are identified, the lower of the concentration values obtained from each column is reported.

All sample results exhibited acceptable RPDs between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks		•			
A. Method blanks		Х		Х	
B. Equipment/Field blanks					X
Laboratory Control Sample (LCS) Accuracy %R		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R	Х				Х
Matrix Spike Duplicate (MSD) %R	Х				Х
MS/MSD RPD	Х				Х
Field/Laboratory Duplicate Sample RPD		Х		Х	
Surrogate Spike %R		Х	Х		
Column (%D) (If dual column is performed-not confirmation purposes only)		Х		Х	
Dilution Factor		Х		X	
Moisture Content					Х
Tier III Validation					
Initial calibration %RSDs		Х		Х	
Continuing calibration %Ds		Х		Х	
System performance and column resolution		Х		Х	
Compound identification and quantitation		•			
A. Quantitation Reports		Х		Х	
B. RT of sample compounds within the established RT windows		Х		Х	
C. Identification/Confirmation		Х		Х	
D. Quantitation transcriptions/calculations		Х		Х	
E. Reporting limits adjusted for sample dilutions		Х		Х	
%R Percent recovery					

Percent recovery Relative percent difference RPD Relative percent difference %RSD Relative standard deviation

%D Percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060, USEPA Method 353.2, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

Concentration (C) Qualifiers

- U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
- The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

Quantitation (Q) Qualifiers

- E The reported value is estimated due to the presence of interference.
- N Spiked sample recovery is not within the control limits.
- * Duplicate analysis is not within the control limits.

Validation Qualifiers

- J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
- UB Analyte considered non-detect at the listed value due to associated blank contamination.
- R The sample results are rejected as unusable. The analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO₃
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO₃

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminant analytes are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Location	Analyte	Sample Result	Qualification
SDG 500-110948 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 DUP-2 (04292016)	Total Selenium	Detected sample results	"I ID" at the DI
SDG 500-110948 MW-6-GW-04292016 MW-7-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	Dissolved Selenium	< RL and < BAL	"UB" at the RL

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of

acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All analytes associated with calibration standard recoveries were within the control limits, with the exception of the analytes presented in the following table.

Sample Locations	Initial / Continuing	Analytes	Standard Recovery
<u>SDG 500-110798</u> MW-3-GW-04272016 MW-4-GW-04272016	CCV	Total Arsenic Dissolved Arsenic	> 110%
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	CCV	Total Aluminum Dissolved Aluminum Total Selenium Dissolved Selenium	> 110%
<u>SDG 500-110872</u> MW-12-GW-04282016	CCV	Total Aluminum Dissolved Aluminum	> 110%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Analytes	Control Limit	Sample Result	Qualification
	75% to 89%	Non-detect	UJ
	75% 10 89%	Detect	J
All analytes	> 110%	Non-detect	No Action
except mercury		Detect	J
	< 75%	Non-detect	R
		Detect	J

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum (AI), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the RL standard analysis are presented below in the RL standards evaluation table.

All RL standard recoveries were within the control limits.

3.4 ICP Interference Check Standard (ICS)

The ICS verifies the laboratories inter-element and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with the MS/MSD analyses exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

All analytes associated with the laboratory duplicate sample analyses exhibited RPDs within the control limit.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. Serial Dilution (SD) Analysis

All metal analytes must exhibit a percent deviation within the established acceptance limit of less than or equal to 10%. The SD control limit does not apply for SDs where the analyte's concentration detected in the parent sample is less than fifty times the instrument detection limit (IDL). In the instance where this is

true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier will be removed. Sample results associated with SD exceedances where the parent sample is not site-specific are not qualified.

Sample location MW-2-GW-04282016 was used in the serial dilution analysis in SDG 500-110948. All analytes associated with the serial dilution analyses exhibited acceptable %Ds except as presented in the following table. The laboratory flagged the total manganese serial dilution as exceeding the 10% control limit; however, the total manganese result is less than fifty times the IDL. Therefore no qualification is required for manganese.

Sample Location	Analyte	Serial Dilution (%D)
SDG 500-110948	Total Calcium	12%
MW-2-GW-04282016	Total Iron	13%

The criteria used to evaluate the serial dilution are presented in the following table. In the case of a serial dilution deviation, the sample results are qualified as documented in the table below. The qualifications are applied to all sample results associated with this analytical batch.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
> 0L	Detect	J

7. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for water matrices of two times the RL is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Total Aluminum	0.20 U	0.066 J	AC
	Total Arsenic	0.0087 J	0.0075 J	AC
	Dissolved Arsenic	0.0049 J	0.0085 J	AC
	Total Barium	0.24	0.25	4.1 %
SDG 500-110872	Dissolved Barium	0.24	0.25	4.1 %
MW-13-GW-04282016 / DUP-1(04282016)	Total Calcium	110	120	8.7 %
	Dissolved Calcium	110	110	0 %
	Total Chromium	0.0044 J	0.0045 J	AC
	Dissolved Chromium	0.0035 J	0.0045 J	AC
	Total Cobalt	0.0027 J	0.0026 J	AC
	Dissolved Cobalt	0.0017 J	0.0025 J	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Total Copper	0.0022 J	0.0025 J	AC
	Total Iron	7.4	7.3	1.4 %
	Dissolved Iron	6.7	7.5	11.3 %
	Total Lead	0.0050 U	0.0029 J	AC
	Total Magnesium	42	43	2.4 %
	Dissolved Magnesium	43	46	6.7 %
	Total Manganese	0.42	0.35	18.2 %
	Dissolved Manganese	0.35	0.37	5.6 %
SDG 500-110872	Total Nickel	0.011	0.011	0.0 %
MW-13-GW-04282016 / DUP-1(04282016)	Dissolved Nickel	0.011	0.011	0.0 %
	Total Potassium	64	68	6.1 %
	Dissolved Potassium	66	71	7.3 %
	Total Selenium	0.010 U	0.0059 J	AC
	Dissolved Selenium	0.010 U	0.0077 J	AC
	Total Sodium	230	240	4.3 %
	Dissolved Sodium	230	240	4.3 %
	Total Vanadium	0.0035 J	0.0039 J	AC
	Dissolved Vanadium	0.0033 J	0.0036 J	AC
	Total Aluminum	0.47	0.51	8.2 %
	Dissolved Aluminum	0.38	0.27	33.8 %
	Total Arsenic	0.024	0.023	4.3 %
	Dissolved Arsenic	0.024	0.021	13.3 %
	Total Barium	0.29	0.31	6.7 %
	Dissolved Barium	0.31	0.29	6.7 %
	Total Cadmium	0.0022	0.0022	0.0 %
	Dissolved Cadmium	0.0016 J	0.0014 J	AC
SDG 500-110948	Total Calcium	30	28	6.9 %
MW-6-GW-04292016 /	Dissolved Calcium	27	26	3.8 %
DUP-2 (04292016)	Total Chromium	0.13	0.14	7.4 %
	Dissolved Chromium	0.14	0.13	7.4 %
	Total Cobalt	0.032	0.036	11.8 %
	Dissolved Cobalt	0.036	0.034	5.7 %
	Total Copper	0.012	0.013	8.0 %
	Dissolved Copper	0.0090 J	0.0048 J	AC
	Total Iron	2.0	2.2	9.5 %
	Dissolved Iron	2.1	2.0	4.9 %
	Total Lead	0.11	0.13	16.7 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Dissolved Lead	0.076	0.032	81.5 %
	Total Magnesium	28	29	3.5 %
	Dissolved Magnesium	29	28	3.5 %
	Total Manganese	0.0099 J	0.0093 J	AC
	Dissolved Manganese	0.0087 J	0.0084 J	AC
	Total Nickel	0.13	0.14	7.4 %
	Dissolved Nickel	0.14	0.14	0.0 %
SDG 500-110948	Total Potassium	570	610	6.8 %
MW-6-GW-04292016 / DUP-2 (04292016)	Dissolved Potassium	610	590	3.3 %
	Total Sodium	3100	3300	6.3 %
	Dissolved Sodium	3300	3200	3.1 %
	Total Vanadium	0.057	0.057	0.0 %
	Dissolved Vanadium	0.054	0.050	7.7 %
	Total Zinc	0.17	0.18	5.7 %
	Dissolved Zinc	0.12	0.060	66.7 %
	Total Mercury	0.00020	0.00020	0.0 %

AC Acceptable

J Estimated (result is < RL)

U Not detected

The dissolved lead and dissolved zinc results exhibited RPDs greater than the control limit for the field duplicate samples MW-6-GW-04292016 and DUP-2 (04292016). The dissolved lead and dissolved zinc results were qualified as estimated for all sample locations in SDG 500-110948..

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated difference between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C		orted		mance ptable	Not
	No	Yes	No	Yes	Required
Inductively Coupled Plasma – Atomic Emission Spect	rometry (I	CP)			
Tier II Validation					
Holding Times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Instrument Blanks		Х	Х		
B. Method Blanks		Х	Х		
C. Equipment/Field Blanks					Х
Laboratory Control Sample (LCS) Accuracy (%R)		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) Accuracy (%R)		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		X	
MS/MSD Precision (RPD)		X		Х	
Post-Digestion Spike (PDS) Accuracy (%R)	Х				X
Post-Digestion Spike Duplicate (PDSD) %R	X				X
PDS/PDSD Precision (RPD)	Х				X
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X	Х		
ICP Serial Dilution		X	X		
Dilution Factor		X		X	
Dissolved versus Total Results		X		Х	
Moisture Content					Х
Tier II Validation					
Initial Calibration Verification		Х		Х	
Continuing Calibration Verification		Х	Х		
RL Check Standard		Х		Х	
ICP Interference Check		Х		Х	
Quantitation transcriptions/calculations		Х		Х	
Reporting limits adjusted to reflect sample dilutions		X		X	

[%]R – Percent recovery RPD – Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrate-N by EPA 353.2	Water	28 days from collection to analysis	Cool to < 6 °C
Nitrite-N by SM4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N, Nitrite-N by SM4500-NO3-F	Water	48 hours from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038	Water	28 days from collection to analysis	Cool to < 6 °C
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C
Total Organic Carbon (TOC) by SW-846 9060	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids by SM 2540-D	Water	7 days from collection to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminants are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analyte	Sample Result	Qualification
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016 MW-5-GW-04272016	Nitrite	Detected sample results < RL and < BAL	"UB" at the sample reporting limit (RL)

Sample Locations	Analyte	Sample Result	Qualification
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	Nitrite	Detected sample results < RL and < BAL	"UB" at the sample reporting limit (RL)

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (±10%).

All analytes associated with the initial and continuing calibrations were within the specified control limits. The correct frequency and type of standards were analyzed.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) / Laboratory Duplicate Analyses

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. When a MSD analysis is performed, the relative percent difference (RPD) between the MS/MSD results must be within the established acceptance limits of 20% for water matrices and 35% for soil matrices.

Note: The MS/MSD control limits do not apply for MS/MSD analyses performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with the MS/MSD analyses exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the reporting limit (RL). A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the

RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

The laboratory duplicate sample results exhibited RPDs within the control limit.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked analytes used in the LCS/LCSD analysis must exhibit recoveries within the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be within the control limit of 20%.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for water matrices of two times the RL is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
	Nitrate-N	0.10 U	0.10 U	AC
SDG 500-110872	Total Suspended Solids (TSS)	14	26	60.0 %
MW-13-GW-04282016 / DUP-1(04282016)	Sulfide	1.7	1.7	0.0 %
	Total Organic Carbon (TOC)	67	56	17.9 %
	Nitrate-N	0.10 U	0.10 U	AC
<u>SDG 500-110948</u> MW-6-GW-04292016 /	Total Suspended Solids (TSS)	17	19	11.1 %
DUP-2 (04292016)	Sulfide	7.9	4.5	54.8 %
,	Total Organic Carbon (TOC)	360	350	2.8 %

AC Acceptable

U Not detected

The TSS results for the field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited a RPD greater than the control limit. The TSS results for MW-13-GW-04282016 and DUP-1(04282016) were qualified as estimated.

The sulfide results for the field duplicate samples MW-6-GW-04292016 and DUP-2 (04292016) exhibited a RPD greater than the control limit. The sulfide results for MW-6-GW-04292016 and DUP-2 (04292016) were qualified as estimated.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 9034, 9038, and 9060, USEPA Method 353.2, and Standard	Rep	orted		mance ptable	Not
Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	No	Yes	No	Yes	Required
Miscellaneous Instrumentation	•				
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Instrument Blanks		Х	Х		
B. Method Blanks		Х	Х		
C. Equipment/Field Blanks					Х
Laboratory Control Sample (LCS) Accuracy (%R)		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		Х	
MS/MSD RPD		Х		Х	
Laboratory Duplicate Sample RPD		Х		Х	
Field Duplicate Sample RPD		Х	Х		
Dilution Factor		Х		Х	
Moisture Content					Х
Tier III Validation					
Initial calibration %RSD or correlation coefficient		Х		Х	
Continuing calibration %R		Х		Х	
Raw Data		Х		Х	
Quantitation transcriptions/calculations		Х		Х	
Reporting limits adjusted for sample dilutions		Х		Х	

[%]RSD – relative standard deviation

[%]R – percent recovery RPD – relative percent difference

[%]D – difference

Validation Performed By:	Dennis Dyke
andation i chomica by.	DCITIO DYNC

Signature:

Date: June 15, 2016

Peer Review: Joseph C. Houser

Date: _ June 20, 2016

CHAIN OF CUSTODY / CORRECTED SAMPLE ANALYSIS DATA SHEETS

9	AR	CA	DIS
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ID#:		

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page	of
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Lab Work Order#	
500-110798	
200-110/10	

Contact & Company Name:	Telephone:					Preservative	- 2	10	<i>P</i>	1	λ				· - Keys	
	312	57	53	77	7.	Filtered (/)	E	N	N C	-	M	N	11	Preservation K	ey: Contai	ner Information Key:
Accelis Address:	Fax:		1 /	1 ,		# of Container	s //	1	1	1	N.	100	7	A. H ₂ SO ₄ B. HCL	1. 40 r 2. 1 L	Amber
Acception Address: 120 5, LaSelle St. Switz 1350 City State Zip						Container	- W	-			 	-	7	C. HNO ₃ D. NaOH		ml Plastic ml Plastic
City State Zip	E-mail Addre	ss:				Information	DAI	DAMET	ER ANA	IVOIC	R METH	OD	L	E. None F. Other:	5. Enc 6. 2 oz	ore . Glass
(Wicago IL 60007	ellyn	gates	@arc	مرازي	com	7	7	XAIVIE I	EK ANA	121313 C	3 1412 171	(1, 2)	- /	G. Other:	7. 4 oz — 8. 8 oz 9. Othe	. Glass . Glass
Project Name/Location (City, State): LCCS Chizurge, IL	Project #:	001801	TAN	12.00	100 h	8	' /	ر پر	3	2 2 W	Ĭ Å	V Kar /	1 No. 1	H. Other:	9. Other	
Sampler's Printed Name: Nicholas Jaks	Sampler's Sign	gnature:	7	-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(Je 1,57)	Y AV	N. A. A.	1 2 VX	PX ST	V. 3	2 1 g	6	Matrix Key: SO - Soil	SE - Sediment	NL - NAPL/Oil
	Calle	ation of	7			8 ×	Na	1 50 v	12 14 16 16 16 16 16 16 16 16 16 16 16 16 16	12 12 14 15 15 15 15 15 15 15 15 15 15 15 15 15	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1. E/Ng-		W - Water T - Tissue	SL - Sludge A - Air	SW - Sample Wipe Other:
Sample ID		ection	Comp	(√) . Grab	Matrix	23	\$5.55 \$7.55	18 18 18 18 18 18 18 18 18 18 18 18 18 1	3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	12 13	27 E	2/2/18	/	REMARKS		
A	Date	Time	Comp	Grab		/ -					ı	70, 14	(
MW-3-GW-04272016	1	1			W	X	×	×	×	×	×	×				
MW-4-GW-04272016	4-27-16			V	W	メ	X	×	×			X		- 63	nes -	
MW-5-6W-04772016	4-27-16	1430		V	W	×	×	×	\ <u>/</u>	7	X	X		0	- \$	
														28	<u> </u>	
														500-110	798 COC	
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Special Instructions/Comments: (1,734 (011-5	w fich	L5 8	2.60	B_T	250P+ C	(S) (S)		☐ Special Q	A/QC Instruc	tions(\(\sigma\):	140	22160	1 Noths	1. 1 XL	evel IV
Special Instructions/Comments: 9034_C SM4500_NO2_B-A Laboratory Information	A	14		. 0	シー! の2.0	6 10	Lingo	unce L	., >+ 4	259	060 A	-(MO))) LOC	al tollo		
374400_DOZ_B-1	litroy	en, Ni	trote	2) 41	070	- Dultie	re, 2	5401	V-Tol	ial Su	spend	oct >	2 bile	<u>. </u>	Voita	Package
Laboratory Information		eipt ustody Sea			Printed	. Reling	uished By		Printed Name:	Keceived By	7	Printed Name:	elinquished l	f Prin	Laboratory l	Received By
	COOIGI CI	aatouy Sea	" (*) _.		N:	خايات المح	Tek.	2	Davic	Bee	ner	Dav	d Be	other c	Sherri	Scott
☐ Cooler packed with ice (✓)	□ Inta	ct	□ No	t Intact	Signatu	to: M	レ		Signature:	R	1	Signature:	170	Sign	ature:	Jagth
Specify Turnaround Requirements:	Sample R	eceint		· · · · ·	Firma	100			Firm/Courier:	T Jan		Firm/Courier:	ععر الله	Firm	XXWVV	ACO /C
			. 0 0	1		To and?	5						A			CHI
Shipping Tracking #:	Condition	/Cooler Te	mpolet	3.1	Date/Ti	ne: 27-16	15.	33	Date/Time:	10 1	593	Date/Time:	16 1	6:20 Date	4/28/14	0640

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110798-1

TestAmerica Job ID: 500-110798-1

Matrix: Water

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52 Date Received: 04/27/16 16:20

Analyte	ic Compo Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
I,1,1-Trichloroethane	<20		20	7.6	ug/L			05/10/16 18:31	20
1,1,2,2-Tetrachloroethane	<20		20		ug/L			05/10/16 18:31	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<20		20		ug/L			05/10/16 18:31	20
I,1,2-Trichloroethane	<20		20		ug/L			05/10/16 18:31	20
I,1-Dichloroethane	<20		20		ug/L			05/10/16 18:31	20
I,1-Dichloroethene	<20		20		ug/L			05/10/16 18:31	20
1,2,4-Trichlorobenzene	<20		20		ug/L			05/10/16 18:31	20
I,2-Dibromo-3-Chloropropane	<100		100		ug/L			05/10/16 18:31	20
I,2-Dibromoethane	<20		20		ug/L			05/10/16 18:31	20
1,2-Dichlorobenzene	<20		20		ug/L			05/10/16 18:31	20
I,2-Dichloroethane	<20		20		ug/L			05/10/16 18:31	20
I,2-Dichloropropane	<20		20		ug/L			05/10/16 18:31	20
1,3-Dichlorobenzene	<20		20		ug/L			05/10/16 18:31	20
I,4-Dichlorobenzene	<20		20		ug/L			05/10/16 18:31	20
2-Hexanone	<100	UJ	100		ug/L			05/10/16 18:31	20
Acetone	<100		100		ug/L			05/10/16 18:31	20
Benzene	250	D	10		ug/L			05/10/16 18:31	20
Bromodichloromethane	<20	D	20		ug/L			05/10/16 18:31	20
Bromoform	<20		20		ug/L			05/10/16 18:31	20
Bromomethane	<40		40		ug/L			05/10/16 18:31	20
Carbon disulfide	<40		40		ug/L			05/10/16 18:31	20
Carbon tetrachloride	<20		20		ug/L			05/10/16 18:31	20
Chlorobenzene	<20		20		ug/L			05/10/16 18:31	20
Chloroethane	<20		20		ug/L			05/10/16 18:31	20
Chloroform	<20		20		ug/L			05/10/16 18:31	20
Chloromethane	<20		20		ug/L			05/10/16 18:31	20
cis-1,2-Dichloroethene	<20		20		ug/L			05/10/16 18:31	20
cis-1,3-Dichloropropene	<20		20		ug/L			05/10/16 18:31	20
Cyclohexane	<20		20		ug/L			05/10/16 18:31	20
Dibromochloromethane	<20		20		ug/L			05/10/16 18:31	20
Dichlorodifluoromethane	<40		40		ug/L			05/10/16 18:31	20
Ethylbenzene	42	D	10		ug/L			05/10/16 18:31	20
sopropylbenzene	<20		20		ug/L			05/10/16 18:31	20
Methyl acetate	<100	UJ	100		ug/L			05/10/16 18:31	20
Methyl Ethyl Ketone	<100		100		ug/L			05/10/16 18:31	20
methyl isobutyl ketone	<100	UJ	100		ug/L			05/10/16 18:31	20
Methyl tert-butyl ether	<20		20		ug/L			05/10/16 18:31	20
Methylcyclohexane	<20		20		ug/L			05/10/16 18:31	20
Methylene Chloride	<100		100		ug/L			05/10/16 18:31	20
Styrene	<20		20		ug/L			05/10/16 18:31	20
Fetrachloroethene	<20		20		ug/L			05/10/16 18:31	20
Foluene	280	D	10		ug/L			05/10/16 18:31	20
rans-1,2-Dichloroethene	<20		20		ug/L			05/10/16 18:31	20
rans-1,3-Dichloropropene	<20		20		ug/L			05/10/16 18:31	20
Frichloroethene	<10		10		ug/L			05/10/16 18:31	20
Frichlorofluoromethane	<20		20		ug/L			05/10/16 18:31	20
/inyl chloride	<10		10		ug/L ug/L			05/10/16 18:31	20
Kylenes, Total	290	D	20		ug/L ug/L			05/10/16 18:31	20

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1 Date Collected: 04/27/16 09:52 **Matrix: Water** Date Received: 04/27/16 16:20

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109	71 - 127		05/10/16 18:31	20
4-Bromofluorobenzene (Surr)	84	71 - 120		05/10/16 18:31	20
Dibromofluoromethane	108	70 - 120		05/10/16 18:31	20
Toluene-d8 (Surr)	95	75 - 120		05/10/16 18:31	20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	38	D	20	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,5-Trichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dimethylphenol	280	D	40	7.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrophenol	<81		81	35	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrotoluene	<4.0		4.0	0.99	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,6-Dinitrotoluene	<2.0		2.0	0.30	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chloronaphthalene	<8.1		8.1	0.95	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chlorophenol	<20		20	2.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Methylphenol	180	D	8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitroaniline	<20		20	5.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitrophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
3,3'-Dichlorobenzidine	<20		20	6.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
3-Nitroaniline	<40		40	7.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4,6-Dinitro-2-methylphenol	<81		81	24	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Bromophenyl phenyl ether	<20		20	2.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloro-3-methylphenol	<40		40	9.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloroaniline	<40		40	8.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chlorophenyl phenyl ether	<20		20	2.6	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitroaniline	<40		40		ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitrophenol	<81		81		ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthene	29	D	4.0		ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthylene	3.7	J D	4.0		ug/L		04/28/16 08:38	05/10/16 15:04	5
Acetophenone	<20	_	20		ug/L		04/28/16 08:38	05/10/16 15:04	5
Anthracene	12	D	4.0		ug/L		04/28/16 08:38	05/10/16 15:04	5
Atrazine	<20		20	2.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzaldehyde	<81	UJ	81		ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]pyrene	<0.81		0.81	0.40	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[b]fluoranthene	<0.81		0.81		ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[g,h,i]perylene	<4.0		4.0		ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[k]fluoranthene	<0.81		0.81		ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethoxy)methane	<8.1		8.1		ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethyl)ether	<8.1		8.1		ug/L			05/10/16 15:04	5
Bis(2-ethylhexyl) phthalate	<40		40		ug/L		04/28/16 08:38	05/10/16 15:04	5
Butyl benzyl phthalate	<8.1		8.1		ug/L			05/10/16 15:04	5
Caprolactam	<40		40		ug/L			05/10/16 15:04	5
Carbazole	140	D	20		ug/L			05/10/16 15:04	5
Chrysene	<2.0	5	2.0		ug/L			05/10/16 15:04	5
Dibenz(a,h)anthracene	<1.2		1.2		ug/L			05/10/16 15:04	5
Dibenzofuran	56	D	8.1		ug/L			05/10/16 15:04	5

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-3-GW-04272016	Lab Sample ID: 500-110798-1
------------------------------------	-----------------------------

Date Collected: 04/27/16 09:52 Matrix: Water Date Received: 04/27/16 16:20

Method: 8270D - Semivolat ^{Analyte}		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil F
Diethyl phthalate	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	
Dimethyl phthalate	<8.1		8.1		ug/L		04/28/16 08:38	05/10/16 15:04	
Di-n-butyl phthalate	<20		20		ug/L		04/28/16 08:38	05/10/16 15:04	
Di-n-octyl phthalate	<40		40		ug/L		04/28/16 08:38	05/10/16 15:04	
Fluoranthene	7.1	D	4.0		ug/L		04/28/16 08:38	05/10/16 15:04	
Fluorene	83	<u>D</u>	4.0		ug/L			05/10/16 15:04	
Hexachlorobenzene	<2.0	D	2.0		ug/L			05/10/16 15:04	
Hexachlorobutadiene	<20	t UJ	20		ug/L			05/10/16 15:04	
Hexachlorocyclopentadiene	~20 - <81		— <u>81</u>					05/10/16 15:04	
Hexachloroethane	<20	† R	20		ug/L				
	<0.81	*I UJ	0.81		ug/L			05/10/16 15:04	
Indeno[1,2,3-cd]pyrene					ug/L			05/10/16 15:04	
sophorone	<8.1		8.1		ug/L			05/10/16 15:04	
Nitrobenzene	<4.0		4.0		ug/L			05/10/16 15:04	
N-Nitrosodi-n-propylamine	<2.0		2.0		ug/L			05/10/16 15:04	
N-Nitrosodiphenylamine	<4.0		4.0		ug/L			05/10/16 15:04	
Pentachlorophenol	<81		81		ug/L			05/10/16 15:04	
Phenanthrene	69	D	4.0		ug/L		04/28/16 08:38	05/10/16 15:04	
Phenol	85	D	20	2.7	ug/L		04/28/16 08:38	05/10/16 15:04	
Pyrene	4.7	D	4.0	1.7	ug/L		04/28/16 08:38	05/10/16 15:04	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil I
2-Fluorobiphenyl	94		30 - 123				04/28/16 08:38	05/10/16 15:04	
2-Fluorophenol (Surr)	75		30 - 110				04/28/16 08:38	05/10/16 15:04	
Nitrobenzene-d5 (Surr)	84		33 - 139				04/28/16 08:38	05/10/16 15:04	
Phenol-d5 (Surr)	66		20 - 100				04/28/16 08:38	05/10/16 15:04	
Terphenyl-d14 (Surr)	113		42 - 150				04/28/16 08:38	05/10/16 15:04	
2,4,6-Tribromophenol (Surr)	114		30 - 150				04/28/16 08:38	05/10/16 15:04	
Method: 8270D - Semivolat	tile Organic Co	mpounds	(GC/MS) - DL						
Analyte		Qualifier	ŘL	MDL	Unit	D	Prepared	Analyzed	Dil F
2-Methylnaphthalene	360		4.0	0.53	ug/L		04/28/16 08:38	05/10/16 17:59	
3 & 4 Methylphenol	280	D	16	3.6	ug/L		04/28/16 08:38	05/10/16 17:59	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	90		30 - 123				04/28/16 08:38	05/10/16 17:59	
2-Fluorophenol (Surr)	69		30 - 110				04/28/16 08:38	05/10/16 17:59	
	76		33 - 139				04/28/16 08:38	05/10/16 17:59	
Phenol-d5 (Surr)	62						04/28/16 08:38	05/10/16 17:59	
` '							04/28/16 08:38	05/10/16 17:59	
, ,	101		30 - 150					05/10/16 17:59	
2-Fluorobiphenyl 2-Fluorophenol (Surr) Nitrobenzene-d5 (Surr) Phenol-d5 (Surr) Terphenyl-d14 (Surr) 2,4,6-Tribromophenol (Surr)	69 76 62 108		30 - 110 33 - 139 20 - 100 42 - 150				04/28/16 08:38 04/28/16 08:38 04/28/16 08:38 04/28/16 08:38	05/10/16 17:59 05/10/16 17:59 05/10/16 17:59 05/10/16 17:59	
	tilo Organic Co	mpounde	(GC/MS) - DI	2					
Method: 8270D - Semivolat	ille Oluaille en		RL	MDL	Unit	D	Prepared	Analyzed	Dil
		Qualifier							
Method: 8270D - Semivolat Analyte Naphthalene		Qualifier D	81	25	ug/L		04/28/16 08:38	05/10/16 18:24	
Analyte Naphthalene	Result 3600	D	81 Limits	25	ug/L		04/28/16 08:38 Prepared		
Analyte Naphthalene Surrogate	Result 3600 %Recovery	D Qualifier	Limits	25	ug/L		Prepared	Analyzed	Dil
Analyte Naphthalene Surrogate 2-Fluorobiphenyl	Result 3600 %Recovery	D Qualifier	Limits 30 - 123	25	ug/L		Prepared 04/28/16 08:38	Analyzed 05/10/16 18:24	Dil
Analyte Naphthalene Surrogate 2-Fluorobiphenyl 2-Fluorophenol (Surr)	Result 3600 %Recovery 0 0	Qualifier D D	Limits 30 - 123 30 - 110	25	ug/L		Prepared 04/28/16 08:38 04/28/16 08:38	Analyzed 05/10/16 18:24 05/10/16 18:24	Dil
Analyte Naphthalene	Result 3600 %Recovery 0 0 0	D Qualifier	Limits 30 - 123	25	ug/L		Prepared 04/28/16 08:38 04/28/16 08:38 04/28/16 08:38	Analyzed 05/10/16 18:24	Dil

TestAmerica Chicago

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-3-GW-04272016 Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52 **Matrix: Water**

Date Received:	04/27/16 16:20
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ne Pesticid	D les (GC) Qualifier	30 - 150 RL				04/28/16 08:38	05/10/16 18:24	10
Result <0.040 <0.040 <0.040								
<0.040 <0.040 <0.040	Qualifier							
<0.040 <0.040			MDL		D	Prepared	Analyzed	Dil Fa
<0.040		0.040	0.0053	•		04/28/16 10:21	05/02/16 19:42	
		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 19:42	
		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.0082	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.0072	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	
< 0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.080		0.080	0.023	ug/L		04/28/16 10:21	05/02/16 19:42	
<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 19:42	
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
50		30 - 143				04/28/16 10:21	05/02/16 19:42	
122	X	30 - 120				04/28/16 10:21	05/02/16 19:42	
		by Gas Chr	omatogr	aphy				
	Qualifier	RL			D	Prepared	Analyzed	Dil Fa
<0.40		0.40	0.067	ug/L		04/28/16 10:21	05/03/16 15:32	
<0.40		0.40		Ü				
<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	
<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	
<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	
<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	
<0.40		0.40	0.070	ug/L		04/28/16 10:21	05/03/16 15:32	
	Qualifier	Limits				Prepared	Analyzed	Dil Fa
60		30 - 127				04/28/16 10:21	05/03/16 15:32	
69		30 - 150				04/28/16 10:21	05/03/16 15:32	
	Qualifier	RL			D	Prepared	Analyzed	Dil Fa
<0.20		0.20		-		04/28/16 08:11	04/28/16 21:29	
<0.020	,	0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:29	
0.0074	J 🖟	0.010		-		04/28/16 08:11	04/28/16 21:29	
	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.40 %Recovery Foo 122 ed Bipheny Result <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.080 <0.40 **Recovery Qualifier 50 122 X ed Biphenyls (PCBs) Result Qualifier <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 <0.40 **Recovery Qualifier 60 69 Result Qualifier 60 69 Result Qualifier 40.40 4	<0.040	<0.040	CO.040	Control Cont	<0.040	

TestAmerica Chicago

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-3-GW-04272016 Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52 **Matrix: Water** Date Received: 04/27/16 16:20

Method: 6010C - Metals (ICP)									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	-		04/28/16 08:11	04/28/16 21:29	1
Cadmium	0.00097	J	0.0020	0.00094	-		04/28/16 08:11	04/28/16 21:29	1
Calcium	58		0.20	0.059	-		04/28/16 08:11	04/28/16 21:29	1
Chromium	<0.010		0.010	0.0024	•		04/28/16 08:11	04/28/16 21:29	1
Cobalt	<0.0050		0.0050	0.00096	Ü		04/28/16 08:11	04/28/16 21:29	1
Copper	<0.010		0.010	0.0022	-		04/28/16 08:11	04/28/16 21:29	1
Iron	7.4		0.20		mg/L		04/28/16 08:11	04/28/16 21:29	1
Lead	0.0024	J	0.0050	0.0024	-		04/28/16 08:11	04/28/16 21:29	1
Magnesium	80		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Manganese	0.33		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Nickel	0.0068	J	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:29	1
Potassium	53		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:29	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:29	1
Sodium	280		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:29	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:29	1
Vanadium	< 0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:29	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:29	1
Method: 6010C - Metals (ICP)	- Dissolved								
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	-		04/28/16 08:11	04/28/16 21:34	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:34	1
Arsenic	0.0046	J 💉	0.010	0.0031	-		04/28/16 08:11	04/28/16 21:34	1
Barium	0.61		0.010	0.0022	-		04/28/16 08:11	04/28/16 21:34	1
Beryllium	<0.0040		0.0040	0.00085	-		04/28/16 08:11	04/28/16 21:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:34	1
Calcium	57		0.20	0.059	-		04/28/16 08:11	04/28/16 21:34	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Cobalt	< 0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:34	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:34	1
Iron	7.3		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:34	1
Lead	< 0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Magnesium	79		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Manganese	0.31		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Nickel	0.0063	J	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:34	1
Potassium	52		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:34	1
Selenium	< 0.010		0.010	0.0046			04/28/16 08:11	04/28/16 21:34	1
Silver	< 0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:34	1
Sodium	270		1.0		mg/L			04/28/16 21:34	1
Thallium	< 0.010		0.010	0.0028	-		04/28/16 08:11	04/28/16 21:34	1
Vanadium	<0.0050		0.0050	0.0019	-		04/28/16 08:11		1
Zinc	<0.020		0.020	0.0090	-			04/28/16 21:34	1
					3. –				
Method: 7470A - Mercury (CV Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1 Date Collected: 04/27/16 09:52 **Matrix: Water**

Date Received: 04/27/16 16:20

Method: 7470A - Mercury (C	,		D.	MDI	11-24		Dogwood	A I I	D!! E
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:47	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:10	1
Sulfate	50		10	4.0	mg/L			05/05/16 08:01	2
Total Organic Carbon - Duplicate	es 21		1.0	0.23	mg/L			05/08/16 16:02	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	6.5		5.0	1.6	mg/L			04/29/16 10:26	1
Ammonia	32	₽	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 21:52	20
Nitrogen, Nitrite <	0.020 -0.0091	JB UB	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	ma/L			05/02/16 18:39	1

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110798-2

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17 **Matrix: Water** Date Received: 04/27/16 16:20

Method: 8260B - Volatile Orga			ъ.		1114	_	D	A	D:: -
Analyte		Qualifier	RL _	MDL		D	Prepared	Analyzed	Dil Fa
1,1,1-Trichloroethane	<1.0		1.0	0.38	_			05/10/16 17:37	
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	_			05/10/16 17:37	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	-			05/10/16 17:37	
1,1,2-Trichloroethane	<1.0		1.0		ug/L			05/10/16 17:37	
1,1-Dichloroethane	11		1.0	0.41	_			05/10/16 17:37	
1,1-Dichloroethene	<1.0		1.0	0.39	_			05/10/16 17:37	
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	-			05/10/16 17:37	
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			05/10/16 17:37	
1,2-Dibromoethane	<1.0		1.0	0.39	_			05/10/16 17:37	
1,2-Dichlorobenzene	<1.0		1.0	0.33	-			05/10/16 17:37	
1,2-Dichloroethane	56		1.0	0.39	_			05/10/16 17:37	
1,2-Dichloropropane	<1.0		1.0	0.43	_			05/10/16 17:37	
1,3-Dichlorobenzene	<1.0		1.0	0.40	_			05/10/16 17:37	
1,4-Dichlorobenzene	<1.0		1.0	0.36	_			05/10/16 17:37	
2-Hexanone	<5.0	UJ	5.0		ug/L			05/10/16 17:37	
Acetone	19		5.0		ug/L			05/10/16 17:37	
Bromodichloromethane	<1.0		1.0	0.37	_			05/10/16 17:37	
Bromoform	<1.0		1.0	0.48	_			05/10/16 17:37	
Bromomethane	<2.0		2.0	0.80	_			05/10/16 17:37	
Carbon disulfide	9.3		2.0	0.45	_			05/10/16 17:37	
Carbon tetrachloride	<1.0		1.0		ug/L			05/10/16 17:37	
Chlorobenzene	<1.0		1.0	0.39	_			05/10/16 17:37	
Chloroethane	<1.0		1.0	0.51	_			05/10/16 17:37	
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 17:37	
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	
cis-1,2-Dichloroethene	3.4		1.0	0.41	ug/L			05/10/16 17:37	
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 17:37	
Cyclohexane	0.97	J	1.0	0.49	ug/L			05/10/16 17:37	
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 17:37	
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 17:37	
Ethylbenzene	2.6		0.50	0.18	ug/L			05/10/16 17:37	
sopropylbenzene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	
Methyl acetate	110	J	5.0	2.0	ug/L			05/10/16 17:37	
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/10/16 17:37	
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/10/16 17:37	
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 17:37	
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 17:37	
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 17:37	
Toluene	13		0.50	0.15	ug/L			05/10/16 17:37	
rans-1,2-Dichloroethene	<1.0		1.0		ug/L			05/10/16 17:37	
rans-1,3-Dichloropropene	<1.0		1.0		ug/L			05/10/16 17:37	
Trichloroethene	0.72		0.50		ug/L			05/10/16 17:37	
Trichlorofluoromethane	<1.0		1.0		ug/L			05/10/16 17:37	
Vinyl chloride	5.2		0.50		ug/L			05/10/16 17:37	
Xylenes, Total	3.5		1.0		ug/L			05/10/16 17:37	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 12:17 Date Received: 04/27/16 16:20

Benzo[a]anthracene

Benzo[b]fluoranthene

Benzo[a]pyrene

Date Received: 04/27/16 16:20								
Surrogate	%Recovery	Qualifier	Limits	Pre	epared	Analyzed	Dil Fac	
1.2 Diablaraothana d4 (Surr)	105		71 107			05/10/16 17:27		

Surrogate	%Recovery	Qualifier	Limits	Preparea	Anaiyzea	DII Fac
1,2-Dichloroethane-d4 (Surr)	105		71 - 127		05/10/16 17:37	1
4-Bromofluorobenzene (Surr)	87		71 - 120		05/10/16 17:37	1
Dibromofluoromethane	105		70 - 120		05/10/16 17:37	1
Toluene-d8 (Surr)	95		75 - 120		05/10/16 17:37	1

Method: 8260B - Volatile Ol	rganic Compo	unas (GC/	M2) - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	490	D	5.0	1.5	ug/L			05/10/16 18:04	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		71 - 127			-		05/10/16 18:04	10
4-Bromofluorobenzene (Surr)	85		71 - 120					05/10/16 18:04	10
Dibromofluoromethane	107		70 - 120					05/10/16 18:04	10
Tal., and dO (O., and)			75 400					05/40/40 40:04	

Toluene-d8 (Surr)	94		75 - 120					05/10/16 18:04	10
Method: 8270D - Semivolatil			•			_			5
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.2		4.2		ug/L		04/28/16 08:38	05/10/16 15:29	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7		ug/L		04/28/16 08:38		1
2,4,5-Trichlorophenol	<8.4		8.4		ug/L		04/28/16 08:38		
2,4,6-Trichlorophenol	<4.2		4.2		ug/L		04/28/16 08:38		1
2,4-Dichlorophenol	<8.4		8.4		ug/L		04/28/16 08:38		1
2,4-Dimethylphenol	13		8.4		ug/L			05/10/16 15:29	
2,4-Dinitrophenol	<17		17		ug/L		04/28/16 08:38		1
2,4-Dinitrotoluene	<0.84		0.84		ug/L		04/28/16 08:38		1
2,6-Dinitrotoluene	<0.42		0.42	0.062	_		04/28/16 08:38		1
2-Chloronaphthalene	<1.7		1.7		ug/L		04/28/16 08:38		1
2-Chlorophenol	<4.2		4.2		ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Methylnaphthalene	< 0.42		0.42	0.055	•		04/28/16 08:38	05/10/16 15:29	1
2-Methylphenol	5.0		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitroaniline	<4.2		4.2	1.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitrophenol	<8.4		8.4	2.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
3 & 4 Methylphenol	9.5		1.7	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
3,3'-Dichlorobenzidine	<4.2		4.2	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
3-Nitroaniline	<8.4		8.4	1.5	ug/L		04/28/16 08:38	05/10/16 15:29	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Bromophenyl phenyl ether	<4.2		4.2	0.45	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloro-3-methylphenol	<8.4		8.4	1.9	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloroaniline	<8.4		8.4	1.7	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chlorophenyl phenyl ether	<4.2		4.2	0.53	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitroaniline	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitrophenol	<17		17	6.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthene	<0.84		0.84		ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthylene	<0.84		0.84		ug/L		04/28/16 08:38	05/10/16 15:29	1
Acetophenone	<4.2		4.2		ug/L		04/28/16 08:38	05/10/16 15:29	1
Anthracene	<0.84		0.84		ug/L		04/28/16 08:38	05/10/16 15:29	1
Atrazine	<4.2		4.2		ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzaldehyde	<17	U.I	17		ug/L			05/10/16 15:29	1
		00			5				

04/28/16 08:38 05/10/16 15:29

04/28/16 08:38 05/10/16 15:29

04/28/16 08:38 05/10/16 15:29

0.17

0.17

0.17

0.048 ug/L

0.083 ug/L

0.068 ug/L

< 0.17

< 0.17

<0.17

UJ

1

1

Matrix: Water

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17 Matrix: Water Date Received: 04/27/16 16:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)
Method: 8270D - Semivolatile Ordanic Compounds (GC/MS) (Continued)
modification of the composition of the community (community)

Analyte	Result (Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	<0.84	UJ	0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[k]fluoranthene	<0.17	UJ	0.17	0.054	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-ethylhexyl) phthalate	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
Butyl benzyl phthalate	<1.7		1.7	0.40	ug/L		04/28/16 08:38	05/10/16 15:29	1
Caprolactam	<8.4		8.4	1.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Carbazole	<4.2		4.2	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Chrysene	<0.42		0.42	0.057	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenz(a,h)anthracene	<0.25 💆	_ UJ	0.25	0.043	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		04/28/16 08:38	05/10/16 15:29	1
Diethyl phthalate	<1.7		1.7	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dimethyl phthalate	<1.7		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-butyl phthalate	<4.2		4.2	0.61	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-octyl phthalate	<8.4		8.4	0.88	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluoranthene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluorene	<0.84		0.84	0.20	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobenzene	<0.42		0.42	0.067	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobutadiene	<4.2 *	UJ	4.2	0.43	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorocyclopentadiene	- <17 *	– R	_17	5.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachloroethane	<4.2	UJ	4.2	0.50	ug/L		04/28/16 08:38	05/10/16 15:29	1
Indeno[1,2,3-cd]pyrene	<0.17	UJ	0.17	0.063	ug/L		04/28/16 08:38	05/10/16 15:29	1
Isophorone	<1.7		1.7	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Naphthalene	2.4		0.84	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Nitrobenzene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodi-n-propylamine	< 0.42		0.42	0.13	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodiphenylamine	<0.84		0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Pentachlorophenol	<17		17	3.3	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenanthrene	<0.84		0.84	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenol	4.3		4.2		ug/L		04/28/16 08:38	05/10/16 15:29	1
Pyrene	<0.84		0.84		ug/L		04/28/16 08:38	05/10/16 15:29	1

5	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2	2-Fluorobiphenyl	72		30 - 123	04/28/16 08:38	05/10/16 15:29	1
2	2-Fluorophenol (Surr)	72		30 - 110	04/28/16 08:38	05/10/16 15:29	1
1	Nitrobenzene-d5 (Surr)	75		33 - 139	04/28/16 08:38	05/10/16 15:29	1
F	Phenol-d5 (Surr)	62		20 - 100	04/28/16 08:38	05/10/16 15:29	1
7	Terphenyl-d14 (Surr)	120		42 - 150	04/28/16 08:38	05/10/16 15:29	1
2	2,4,6-Tribromophenol (Surr)	101		30 - 150	04/28/16 08:38	05/10/16 15:29	1

Method: 8081B - Organochlorine Pesticides (GC)

Welliou. 606 IB - Organic	Definition for the structures (GC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041	0.041	0.0054	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-BHC	<0.041	0.041	0.0026	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-Chlordane	<0.041	0.041	0.0045	ug/L		04/28/16 10:21	05/02/16 20:01	1
beta-BHC	<0.041	0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDD	<0.041	0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDE	<0.041	0.041	0.0039	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDT	<0.041	0.041	0.0033	ug/L		04/28/16 10:21	05/02/16 20:01	1
delta-BHC	<0.041	0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1
uella-DHC	~0.04 I	0.041	0.010	ug/L		04/20/10 10.21	03/02/10 20.01	

Lab Sample ID: 500-110798-2

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 12:17

Date Received: 04/27/16 16:20

Matrix: Water

Method: 8081B - Organochi						_	_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.041		0.041	0.013	-		04/28/16 10:21	05/02/16 20:01	
Endosulfan I	<0.041		0.041	0.0042	-		04/28/16 10:21		•
Endosulfan II	<0.041		0.041	0.0029	-			05/02/16 20:01	,
Endosulfan sulfate	<0.041		0.041	0.012			04/28/16 10:21		
Endrin	<0.041		0.041	0.014	-		04/28/16 10:21	05/02/16 20:01	1
Endrin aldehyde	<0.041		0.041	0.0084	-		04/28/16 10:21	05/02/16 20:01	1
Endrin ketone	<0.041		0.041	0.017	0		04/28/16 10:21	05/02/16 20:01	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/28/16 10:21	05/02/16 20:01	1
gamma-Chlordane	<0.041		0.041	0.0073	ug/L		04/28/16 10:21	05/02/16 20:01	•
Heptachlor	< 0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Methoxychlor	<0.081		0.081	0.023	ug/L		04/28/16 10:21	05/02/16 20:01	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/02/16 20:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	46		30 - 143				04/28/16 10:21	05/02/16 20:01	1
Tetrachloro-m-xylene	146	X	30 - 120				04/28/16 10:21	05/02/16 20:01	1
Method: 8082A - Polychlori	nated Bipheny	/Is (PCBs)	by Gas Chr	omatogr	aphy				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1016	<0.41		0.41	0.068	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1221	- 1.3	_	0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1221	0.93		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1232	2.3	_	0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1232	1.8		0.41		ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1242	<0.41		0.41		ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1242	<0.41		0.41		ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1248	<0.41		0.41		ug/L			05/03/16 15:48	1
PCB-1248	<0.41		0.41		ug/L			05/03/16 15:48	1
PCB-1254	<0.41		0.41		ug/L			05/03/16 15:48	1
PCB-1254	<0.41		0.41		ug/L			05/03/16 15:48	1
PCB-1260	<0.41		0.41	0.071	ug/L			05/03/16 15:48	
PCB-1260	<0.41		0.41	0.071	ug/L			05/03/16 15:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene		Quanner	30 - 127				04/28/16 10:21	05/03/16 15:48	Diriac
Tetrachloro-m-xylene Tetrachloro-m-xylene	62		30 - 127				04/28/16 10:21		1
DCB Decachlorobiphenyl	37		30 - 121 30 - 150				04/28/16 10:21		1
			30 - 150				04/28/16 10:21	05/03/16 15:48	1
	39								
DCB Decachlorobiphenyl Method: 6010C - Metals (ICI	P)	Qualifier	RI	МП	Unit	D	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl Method: 6010C - Metals (ICI Analyte	P) Result	Qualifier	RL 0.20	MDL 0.062		<u>D</u>	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl Method: 6010C - Metals (ICI Analyte Aluminum	Result <0.20	Qualifier	0.20	0.062	mg/L	<u>D</u>	04/28/16 08:11	04/28/16 21:40	1
Method: 6010C - Metals (ICI Analyte Aluminum Antimony	Result <0.20 <0.020		0.20 0.020	0.062 0.0064	mg/L mg/L	<u>D</u>	04/28/16 08:11 04/28/16 08:11	04/28/16 21:40 04/28/16 21:40	1
Method: 6010C - Metals (ICI Analyte Aluminum Antimony Arsenic	Result <0.20 <0.020 0.0066		0.20 0.020 0.010	0.062 0.0064 0.0031	mg/L mg/L mg/L	<u>D</u>	04/28/16 08:11 04/28/16 08:11 04/28/16 08:11	04/28/16 21:40 04/28/16 21:40 04/28/16 21:40	1
Method: 6010C - Metals (ICI Analyte Aluminum Antimony Arsenic Barium	Result <0.20 <0.020 <0.0066 0.0063		0.20 0.020 0.010 0.010	0.062 0.0064 0.0031 0.0022	mg/L mg/L mg/L	<u>D</u>	04/28/16 08:11 04/28/16 08:11 04/28/16 08:11 04/28/16 08:11	04/28/16 21:40 04/28/16 21:40 04/28/16 21:40 04/28/16 21:40	1 1
Method: 6010C - Metals (ICI Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium	Result <0.20 <0.020 0.0066	٦٨	0.20 0.020 0.010	0.062 0.0064 0.0031	mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/28/16 08:11 04/28/16 08:11 04/28/16 08:11	04/28/16 21:40 04/28/16 21:40 04/28/16 21:40 04/28/16 21:40 04/28/16 21:40	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 12:17 Matrix: Water Date Received: 04/27/16 16:20

Analyto	P) (Continued)	Qualifier	RL	MDL	Unit	D	Prepared	Analyzad	Dil Fa
Analyte Chromium	<0.010	Qualifier	0.010	0.0024			04/28/16 08:11	Analyzed 04/28/16 21:40	DII Fa
Cobalt	<0.010		0.010	0.0024	-		04/28/16 08:11		
Copper	<0.010		0.0030	0.00090			04/28/16 08:11		
	1.1		0.010		mg/L		04/28/16 08:11		
ron Lead	0.0026		0.20	0.0024	-		04/28/16 08:11		
	98		0.0030	0.0024	•		04/28/16 08:11		
Magnesium Manganasa	2.2		0.10	0.0034	-		04/28/16 08:11		
Manganese lickel	<0.010		0.010	0.0034	-		04/28/16 08:11		
Potassium			0.50		mg/L			04/28/16 21:40	
Selenium	13 < 0.010		0.50	0.0046	-			04/28/16 21:40	
Silver	<0.010		0.010	0.0048	-				
					mg/L			04/28/16 21:40	
Sodium	470 < 0.010		1.0		-			04/28/16 21:40	
hallium (anadium			0.010 0.0050	0.0028 0.0019	-			04/28/16 21:40	
anadium inc	0.0026 < 0.020	J	0.0050	0.0019	-			04/28/16 21:40	
IIIC	<0.020		0.020	0.0090	mg/L		04/20/10 00.11	04/28/16 21:40	
Method: 6010C - Metals (ICF		Qualifier	RL	MDL	l lmi4		Duamanad	Analysed	Dil Fa
.nalyte .luminum	- Result	Qualifier	0.20	0.062		D	Prepared 04/28/16 08:11	Analyzed 04/28/16 21:45	
	<0.020		0.20	0.002	-		04/28/16 08:11		
ntimony	0.020	/	0.020		-				
Arsenic		J 7		0.0031			04/28/16 08:11		
Barium	0.063		0.010	0.0022	•		04/28/16 08:11		
Beryllium	<0.0040		0.0040	0.00085	•		04/28/16 08:11		
Cadmium	0.0012	J	0.0020	0.00094	•		04/28/16 08:11		
Calcium	240		0.20	0.059	-		04/28/16 08:11		
Chromium	<0.010		0.010	0.0024	_		04/28/16 08:11		
Cobalt	<0.0050		0.0050	0.00096			04/28/16 08:11		
Copper	0.0022	J	0.010	0.0022	_			04/28/16 21:45	
ron	0.69		0.20		mg/L		04/28/16 08:11		
ead	0.0031	. J	0.0050	0.0024	Ü			04/28/16 21:45	
lagnesium -	97		0.10	0.034	_			04/28/16 21:45	
Manganese	2.2		0.010	0.0034	_			04/28/16 21:45	
lickel	0.0037	. J	0.010	0.0031	Ü			04/28/16 21:45	
Potassium	13		0.50		mg/L			04/28/16 21:45	
Selenium	<0.010		0.010	0.0046	-			04/28/16 21:45	
Silver	<0.0050		0.0050	0.0013	-			04/28/16 21:45	
Sodium	460		1.0		mg/L			04/28/16 21:45	
⁻ hallium	<0.010		0.010	0.0028	_			04/28/16 21:45	
/anadium	0.0022	J	0.0050	0.0019				04/28/16 21:45	
linc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:45	
Method: 7470A - Mercury (C							_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:49	
Method: 7470A - Mercury (C	,								
Analyte Mercury	<0.00020	Qualifier	RL 0.00020	MDL 0.00011		D	Prepared	Analyzed 05/02/16 11:51	Dil Fa

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 12:17 Matrix: Water

Date Received: 04/27/16 16:20

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.2		1.0	0.22	mg/L			05/03/16 05:18	1
Sulfate	640		130	50	mg/L			05/05/16 08:02	25
Total Organic Carbon - Duplica	tes 100		4.0	0.92	mg/L			05/08/16 16:22	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	7.0		5.0	1.6	mg/L			04/29/16 10:28	1
Ammonia	0.31	ø	0.20	0.043	mg/L		05/09/16 19:05	05/09/16 21:55	1
Nitrogen, Nitrite	< 0.020 0.011	JB UB	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:41	1

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 14:30 Date Received: 04/27/16 16:20 Matrix: Water

TestAmerica Job ID: 500-110798-1

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 15:50	
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 15:50	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 15:50	
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 15:50	
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/10/16 15:50	
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 15:50	
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 15:50	
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 15:50	
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 15:50	
1,4-Dichlorobenzene	4.0		1.0	0.36	ug/L			05/10/16 15:50	
2-Hexanone	<5.0	UJ	5.0		ug/L			05/10/16 15:50	
Acetone	<5.0		5.0	1.7	ug/L			05/10/16 15:50	
Benzene	<0.50		0.50		ug/L			05/10/16 15:50	
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 15:50	
Bromoform	<1.0		1.0		ug/L			05/10/16 15:50	
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 15:50	
Carbon disulfide	<2.0		2.0	0.45	-			05/10/16 15:50	
Carbon tetrachloride	<1.0		1.0		ug/L			05/10/16 15:50	
Chlorobenzene	4.6		1.0	0.39	ug/L			05/10/16 15:50	
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 15:50	
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 15:50	
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/10/16 15:50	
cis-1,3-Dichloropropene	<1.0		1.0		ug/L			05/10/16 15:50	
Cyclohexane	1.4		1.0	0.49	ug/L			05/10/16 15:50	
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 15:50	
Dichlorodifluoromethane	<2.0		2.0		ug/L			05/10/16 15:50	
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/10/16 15:50	
lsopropylbenzene	36		1.0	0.39	-			05/10/16 15:50	
Methyl acetate	<5.0	UJ	5.0		ug/L			05/10/16 15:50	
Methyl Ethyl Ketone		UJ	5.0	2.1	ug/L			05/10/16 15:50	
methyl isobutyl ketone	<5.0	UJ	5.0		ug/L			05/10/16 15:50	
Methyl tert-butyl ether	<1.0		1.0		ug/L			05/10/16 15:50	
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 15:50	
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 15:50	
Toluene	<0.50		0.50		ug/L			05/10/16 15:50	
rans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 15:50	
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 15:50	
Trichloroethene	<0.50		0.50	0.16	ug/L			05/10/16 15:50	
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	
Vinyl chloride	< 0.50		0.50	0.20	ug/L			05/10/16 15:50	
Xylenes, Total	0.73	J	1.0	0.22	ug/L			05/10/16 15:50	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3 Date Collected: 04/27/16 14:30 **Matrix: Water** Date Received: 04/27/16 16:20

Surrogate	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111	71 - 127		05/10/16 15:50	1
4-Bromofluorobenzene (Surr)	84	71 - 120		05/10/16 15:50	1
Dibromofluoromethane	110	70 - 120		05/10/16 15:50	1
Toluene-d8 (Surr)	93	75 - 120		05/10/16 15:50	1

Analyte	Result	Qualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,1'-Biphenyl	<4.0	4.0	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	
2,2'-oxybis[1-chloropropane]	<1.6	1.6	0.31	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4,5-Trichlorophenol	<8.1	8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4,6-Trichlorophenol	<4.0	4.0	0.58	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4-Dichlorophenol	<8.1	8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4-Dimethylphenol	<8.1	8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4-Dinitrophenol	<16	16	7.0	ug/L		04/28/16 08:38	05/10/16 15:54	
2,4-Dinitrotoluene	<0.81	0.81	0.20	ug/L		04/28/16 08:38	05/10/16 15:54	
2,6-Dinitrotoluene	<0.40	0.40	0.060	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Chloronaphthalene	<1.6	1.6	0.19	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Chlorophenol	<4.0	4.0	0.45	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Methylnaphthalene	0.64	0.40	0.053	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Methylphenol	<1.6	1.6	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Nitroaniline	<4.0	4.0	1.0	ug/L		04/28/16 08:38	05/10/16 15:54	
2-Nitrophenol	<8.1	8.1	2.0	ug/L		04/28/16 08:38	05/10/16 15:54	
3 & 4 Methylphenol	<1.6	1.6	0.36	ug/L		04/28/16 08:38	05/10/16 15:54	
3,3'-Dichlorobenzidine	<4.0	4.0	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	
3-Nitroaniline	<8.1	8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	
4,6-Dinitro-2-methylphenol	<16	16	4.8	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Bromophenyl phenyl ether	<4.0	4.0	0.44	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Chloro-3-methylphenol	<8.1	8.1	1.9	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Chloroaniline	<8.1	8.1	1.6	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Chlorophenyl phenyl ether	<4.0	4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Nitroaniline	<8.1	8.1	1.3	ug/L		04/28/16 08:38	05/10/16 15:54	
4-Nitrophenol	<16	16	6.0	ug/L		04/28/16 08:38	05/10/16 15:54	
Acenaphthene	0.31	J 0.81	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	
Acenaphthylene	<0.81	0.81	0.22	ug/L		04/28/16 08:38	05/10/16 15:54	
Acetophenone	<4.0	4.0	0.54	ug/L		04/28/16 08:38	05/10/16 15:54	
Anthracene	<0.81	0.81	0.27	ug/L		04/28/16 08:38	05/10/16 15:54	
Atrazine	<4.0	4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzaldehyde	<16	^ UJ 16	12	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzo[a]anthracene	<0.16	0.16	0.046	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzo[a]pyrene	<0.16	0.16	0.080	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzo[b]fluoranthene	<0.16	0.16	0.065	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzo[g,h,i]perylene	<0.81	0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	
Benzo[k]fluoranthene	<0.16	0.16	0.052	ug/L		04/28/16 08:38	05/10/16 15:54	
Bis(2-chloroethoxy)methane	<1.6	1.6	0.23	ug/L		04/28/16 08:38	05/10/16 15:54	
Bis(2-chloroethyl)ether	<1.6	1.6	0.24	ug/L		04/28/16 08:38	05/10/16 15:54	
Bis(2-ethylhexyl) phthalate	<8.1	8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	
Butyl benzyl phthalate	<1.6	1.6		ug/L		04/28/16 08:38	05/10/16 15:54	
Caprolactam	<8.1	8.1		ug/L		04/28/16 08:38	05/10/16 15:54	
Carbazole	<4.0	4.0		ug/L			05/10/16 15:54	
Chrysene	<0.40	0.40	0.055				05/10/16 15:54	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

gamma-Chlordane

Date Collected: 04/27/16 14:30 Matrix: Water

Method: 8270D - Semivola Analyte		Qualifier	(GC/MS) (CC	MDL	•	D	Prepared	Analyzed	Dil Fa
Dibenz(a,h)anthracene	<0.24	Qualifier	0.24	0.041		_	04/28/16 08:38	05/10/16 15:54	Dilla
Dibenzofuran	<1.6		1.6	0.21	-		04/28/16 08:38	05/10/16 15:54	
Diethyl phthalate	<1.6		1.6		ug/L		04/28/16 08:38		
Dimethyl phthalate	<1.6		1.6	0.25	_		04/28/16 08:38		
Di-n-butyl phthalate	<4.0		4.0	0.59	_		04/28/16 08:38		
Di-n-octyl phthalate	<8.1		8.1		ug/L			05/10/16 15:54	
Fluoranthene	<0.81		0.81	0.37	_			05/10/16 15:54	
Fluorene	0.20	1	0.81	0.20	_			05/10/16 15:54	
Hexachlorobenzene	<0.40		0.40	0.064	•		04/28/16 08:38		
Hexachlorobutadiene	<4.0	∮ uJ	4.0	0.42	_			05/10/16 15:54	
Hexachlorocyclopentadiene	- <16	⊥ [∪] R	16		ug/L ug/L			05/10/16 15:54	
lexachloroethane	<4.0		4.0		ug/L		04/28/16 08:38		
	<0.16	1 UJ	0.16	0.46	-			05/10/16 15:54	
ndeno[1,2,3-cd]pyrene	<1.6		1.6		•			05/10/16 15:54	
sophorone			0.81	0.30			04/28/16 08:38		
laphthalene litrobenzene	0.64 < 0.81	J	0.81	0.25	ug/L ug/L			05/10/16 15:54 05/10/16 15:54	
					-				
-Nitrosodi-n-propylamine	<0.40		0.40		ug/L			05/10/16 15:54	
-Nitrosodiphenylamine	1.2		0.81		ug/L		04/28/16 08:38		
entachlorophenol	<16		16		ug/L		04/28/16 08:38		
henanthrene	<0.81		0.81	0.24	-		04/28/16 08:38		
henol	<4.0		4.0		ug/L		04/28/16 08:38		
yrene	<0.81		0.81	0.35	ug/L		04/28/16 08:38	05/10/16 15:54	
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
-Fluorobiphenyl	88		30 - 123				04/28/16 08:38	05/10/16 15:54	
-Fluorophenol (Surr)	72		30 - 110				04/28/16 08:38	05/10/16 15:54	
litrobenzene-d5 (Surr)	80		33 - 139				04/28/16 08:38	05/10/16 15:54	
henol-d5 (Surr)	58		20 - 100				04/28/16 08:38	05/10/16 15:54	
erphenyl-d14 (Surr)	112		42 - 150				04/28/16 08:38	05/10/16 15:54	
4,6-Tribromophenol (Surr)	110		30 - 150				04/28/16 08:38	05/10/16 15:54	
lethod: 8081B - Organocl	alorino Posticid	los (GC)							
nalyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
						-	04/28/16 10:21	05/02/16 20:20	
ldrin	<0.040		0.040	0.0053	ug/L				
				0.0053 0.0026	_		04/28/16 10:21	05/02/16 20:20	
pha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21 04/28/16 10:21	05/02/16 20:20	
pha-BHC pha-Chlordane	<0.040 <0.040		0.040 0.040	0.0026 0.0044	ug/L ug/L		04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC	<0.040 <0.040 <0.040		0.040 0.040 0.040	0.0026 0.0044 0.010	ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD	<0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013	ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE	<0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038	ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT	<0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032	ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010	ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC ieldrin	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013	ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC ieldrin ndosulfan I	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC ieldrin ndosulfan I	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013 0.0041 0.0028	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC eldrin ndosulfan II ndosulfan sulfate	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013 0.0041 0.0028 0.012	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC ieldrin indosulfan I indosulfan sulfate indrin	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013 0.0041 0.0028 0.012	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	
pha-BHC pha-Chlordane eta-BHC 4'-DDD 4'-DDE 4'-DDT elta-BHC ieldrin ndosulfan I ndosulfan sulfate ndrin ndrin aldehyde	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0032 0.010 0.013 0.0041 0.0028 0.012 0.014 0.0081	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	
Ipha-BHC Ipha-Chlordane eta-BHC ,4'-DDD ,4'-DDE ,4'-DDT elta-BHC bieldrin indosulfan I indosulfan sulfate indrin indrin aldehyde indrin ketone	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0038 0.0032 0.010 0.013 0.0041 0.0028 0.012 0.014 0.0081 0.007	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	
Aldrin Ilpha-BHC Ilpha-Chlordane Ileta-BHC Ilpha-Chlordane Ileta-BHC Ileta-B	<0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040 <0.040		0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040 0.040	0.0026 0.0044 0.010 0.013 0.0032 0.010 0.013 0.0041 0.0028 0.012 0.014 0.0081	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		04/28/16 10:21 04/28/16 10:21	05/02/16 20:20 05/02/16 20:20	

0.040

0.0071 ug/L

< 0.040

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 14:30 Matrix: Water

Method: 8081B - Organod	chlorine Pesticio	les (GC) (Co	ntinued)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Heptachlor	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 20:20	
Methoxychlor	< 0.079		0.079	0.023	ug/L		04/28/16 10:21	05/02/16 20:20	
oxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 20:20	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	44		30 - 143				04/28/16 10:21	05/02/16 20:20	
Tetrachloro-m-xylene	76		30 - 120				04/28/16 10:21	05/02/16 20:20	
Method: 8082A - Polychic	orinated Biphen	yls (PCBs) b	y Gas Chr	omatogr	aphy				
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
CB-1016	<0.40		0.40	0.066	ug/L		04/28/16 10:21	05/03/16 16:03	
CB-1221	< 0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	
CB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	
CB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	
PCB-1248	<0.40		0.40		ug/L		04/28/16 10:21	05/03/16 16:03	
CB-1254	<0.40		0.40		ug/L		04/28/16 10:21	05/03/16 16:03	
CB-1260	<0.40		0.40	0.069	-			05/03/16 16:03	
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
etrachloro-m-xylene	66		30 - 127				04/28/16 10:21	05/03/16 16:03	
CB Decachlorobiphenyl	54		30 - 150				04/28/16 10:21	05/03/16 16:03	
Method: 6010C - Metals (I	ICP)								
Analyte	,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
luminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:50	
ntimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:50	
rsenic	<0.010	1	0.010	0.0031	_		04/28/16 08:11	04/28/16 21:50	
Barium	0.96		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:50	
Beryllium	<0.0040		0.0040	0.00085	-		04/28/16 08:11	04/28/16 21:50	
admium	0.00094	J	0.0020	0.00094	-		04/28/16 08:11	04/28/16 21:50	
Calcium	88		0.20	0.059	-		04/28/16 08:11	04/28/16 21:50	
Chromium	<0.010		0.010	0.0024	-		04/28/16 08:11	04/28/16 21:50	
Cobalt	<0.0050		0.0050	0.00096	-		04/28/16 08:11	04/28/16 21:50	
Copper	<0.010		0.010	0.0022			04/28/16 08:11		
• •	28		0.20		mg/L		04/28/16 08:11		
on ead	<0.0050		0.20	0.0024	-			04/28/16 21:50	
					-		04/28/16 08:11		
lagnesium	110		0.10	0.034	-			04/28/16 21:50	
langanese	0.097		0.010	0.0034	-		04/28/16 08:11		
lickel	0.0043	J	0.010	0.0031	-		04/28/16 08:11		
otassium	47		0.50		mg/L			04/28/16 21:50	
elenium	<0.010		0.010	0.0046	-		04/28/16 08:11		
ilver	<0.0050		0.0050	0.0013			04/28/16 08:11	04/28/16 21:50	
odium	170		1.0		mg/L			04/28/16 21:50	
hallium	<0.010		0.010	0.0028	-		04/28/16 08:11		
'anadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:50	
inc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:50	
Method: 6010C - Metals (I	ICP) - Dissolved								
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20		0.20	0.062	ma/l		04/28/16 08:11	04/28/16 20:01	

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110798-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/27/16 14:30 Matrix: Water
Date Received: 04/27/16 16:20

Method: 6010C - Metals (ICP) Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 20:01	
Arsenic	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	
Barium	0.91		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	
Beryllium	< 0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 20:01	
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 20:01	1
Calcium	82		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 20:01	
Chromium	< 0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	
Cobalt	< 0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 20:01	
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	
Iron	26		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 20:01	
Lead	< 0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	1
Magnesium	110		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 20:01	1
Manganese	0.093		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 20:01	
Nickel	0.0040	J	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	
Potassium	45		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 20:01	•
Selenium	< 0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 20:01	
Silver	< 0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 20:01	
Sodium	170		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 20:01	1
Thallium	< 0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 20:01	1
Vanadium	< 0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 20:01	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 20:01	1
Method: 7470A - Mercury (CV	,								
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:53	1
Method: 7470A - Mercury (CV/ Analyte	,	lved Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020	Qualifier	0.00020	0.00011			04/29/16 16:00	05/02/16 11:59	Dil Fac
ivier cur y	<0.00020		0.00020	0.00011	IIIg/L		04/29/10 10:00	03/02/10 11.59	
General Chemistry	Decult	Qualifier	DI	MDL	l lmi4	_	Dranarad	Analyzad	Dil Es
Analyte Sulfide	<1.0	Qualifier	RL 1.0		mg/L	D	Prepared	Analyzed 05/03/16 05:21	Dil Fac
Sulfate	< 1.0 < 5.0		5.0		_				,
					mg/L			05/06/16 09:07	
Total Organic Carbon - Duplicates	18		1.0		mg/L			05/08/16 16:43	
Nitrogen, Nitrate	<0.10		0.10	0.045	_			05/03/16 14:20	
Total Suspended Solids	72	-	5.0		mg/L		05/00/40 40:05	04/29/16 10:29	20
Ammonia	57		4.0		mg/L		05/09/16 19:05	05/09/16 21:57	20
	.020 -0.010	JB UB	0.020	0.0032	•			04/28/16 11:48	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:44	1

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ID#:		

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page __ of __ Lab Work Order # 500-110872

Γ	Contact & Company Name:	Telephone:					Preservative	E	E	\ C	(À	À		Keys	
	Arcedis Address: 120 S. LaSalle St. Suite 1350 City State Zip	313	57	5 3	777		Filtered (✓)				V				Preservation Key: Container Info A. H ₂ SO ₄ 1. 40 ml Vial B. HCL 2. 1 L Amber	rmation Key:
1	Address:	Fax:					# of Containers	6		-	1	100		9		
1	120 S. LaSalle St. Suite 1350						Container Information								D. NaOH 4. 500 ml Plas E. None 5. Encore	tic
	City State Zip	E-mail Addre					1 15	PAI	RAMETI	ER ANA	LYSIS 8	METH	OD		F. Other: 6. 2 oz, Glass 7. 4 oz, Glass	··· ·
1	Chicago IL 66033 roject Name/Location (City, State):	ellyn.	gates E	garca	d.3.c	8W1	/_	. /		72 /	V25V	ر/, ف	n /		G. Other: 8. 8 oz, Glass H. Other: 9. Other:	
-	LCCS Chicago, IL	CTO	1805.	り とひて,	9000	5	23	· /	/ si	2 × 12	So Solw	/ / 3 - 1 / - 1	1 × 1/2	3./-	10. Other:	
S	ampler's Printed Name:	Sampler's Si	gnature:				(00%) X17		an Andrew	7. 20 X	Sult (C) Sult	SH FSON		Methods is		NAPL/Oil
r		Colle	ection	Туре	1(1)		12 ×	1 30 A		780	(1)/ 2 8 3	r /£ 3.8	3	£ /	W - Water SL - Sludge SW T - Tissue A - Air Othe	- Sample Wipe er:
	Sample ID	Date	Time	Comp	Grab	Matrix	1 3 3 S	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	学	1 2 A	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12 12 L		REMARKS	
+	MW-1-GW-04282016			Gomp	V	W	×	×	ix i	w w	×	×	X			
-						W										
-	MW-13-GW-04282016				V		×			×	<u> </u>	<u>×</u>	X			
1	MW-12-GW-04282016	4-28-16	1240		V	W	×	ン		X	乂		X			
	MW-11-GW-04282016	4-28-16	1422		V	W	X	X	又	×	X	×	人			
,	DUP-1 (04282016)	4-28-16	٠			W	×	×	V	><	×	لا	k			
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	pecial Instructions/Comments: 9034_Cal.												<i>Uethool</i> ;		* Leve	
	SM4500_NOZ_B-NH														Dute Pag By Laboratory Receive	leage
							Relinqu	ished By			Received By			linquished		d By
La	b Name:	Cooler Cu	ustody Sea	ıl (√)	*	Printed	Name:	TIL	5	Rrinted Name:	1 Bo	Knal	Printed Name:	Bon	Printed Name: Sou	W In
	Cooler packed with ice (✓)	Inta	ct	☐ Not	t Intact	Signatu	re:	1		Signature:		1	6lgnature:	100	Signature:	
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Sp	ecify_Turnaround_Requirements:	Sample-R	leceipt:		Wilson Strikerson and Andrews	Firm:	ircadi	<u></u>		Firm/Courier	 ====		Firm/Courier:	17	Firm: PA-(AM)	
Sh	ipping Tracking #:	Condition	/Cooler Te	mp: 0,0	1.8		28-16		20	Date/Time:	W- 1	T120	Date/Time:	11	16:05 Date/Time: D4 28/110	1100
					1.	19-	28-16	۱٦		Date/Time:	10 1	200	7-28-1	6	16:05 D4 28/110	16:05

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 08:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 8260B - Volatile Orgar Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	94		5.0	1.7	ug/L		•	05/11/16 10:58	
Benzene	25	J	0.50	0.15	_			05/11/16 10:58	
Bromodichloromethane	<1.0	UJ	1.0	0.37	_			05/11/16 10:58	
Bromoform	<1.0	UJ	1.0		ug/L			05/11/16 10:58	
Bromomethane	<2.0	UJ	2.0	0.80	-			05/11/16 10:58	
Carbon disulfide	<2.0		2.0		ug/L			05/11/16 10:58	
Carbon tetrachloride	<1.0	UJ	1.0		ug/L			05/11/16 10:58	
Chlorobenzene	4.1	J	1.0	0.39	-			05/11/16 10:58	
Chloroethane	<1.0	11.1	1.0		ug/L			05/11/16 10:58	
Chloroform	<1.0		1.0		ug/L			05/11/16 10:58	
Chloromethane	<1.0		1.0	0.32	-			05/11/16 10:58	
cis-1,2-Dichloroethene	<1.0		1.0		ug/L			05/11/16 10:58	
cis-1,3-Dichloropropene	<1.0		1.0		ug/L			05/11/16 10:58	
Cyclohexane	1.1		1.0	0.49	-			05/11/16 10:58	
Dibromochloromethane	<1.0		1.0		ug/L			05/11/16 10:58	
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			05/11/16 10:58	
1,2-Dibromoethane	<1.0		1.0	0.39	-			05/11/16 10:58	
1,2-Dichlorobenzene	1.1	J	1.0	0.33	-			05/11/16 10:58	
1,3-Dichlorobenzene	<1.0		1.0		ug/L			05/11/16 10:58	
1,4-Dichlorobenzene	2.1	J	1.0		ug/L			05/11/16 10:58	
Dichlorodifluoromethane	<2.0		2.0		ug/L			05/11/16 10:58	
1,1-Dichloroethane	<1.0	UJ	1.0		ug/L			05/11/16 10:58	
1,2-Dichloroethane	<1.0		1.0		ug/L			05/11/16 10:58	
1,1-Dichloroethene	<1.0		1.0		ug/L			05/11/16 10:58	
	<1.0	UJ	1.0		ug/L			05/11/16 10:58	
1,2-Dichloropropane	10	UJ	0.50		ug/L ug/L			05/11/16 10:58	
Ethylbenzene		J UJ			ug/L ug/L			05/11/16 10:58	
2-Hexanone	<5.0		5.0					05/11/16 10:58	
Isopropylbenzene	7.3	J	1.0		ug/L				
Methyl acetate	< 5.0	UJ UJ	5.0		ug/L			05/11/16 10:58	
Methylcyclohexane	<1.0	UJ	1.0	0.32	-			05/11/16 10:58	
Methylene Chloride	<5.0		5.0		ug/L			05/11/16 10:58	
Methyl Ethyl Ketone	48	J J	5.0		ug/L			05/11/16 10:58	
methyl isobutyl ketone	57		5.0		ug/L			05/11/16 10:58	
Methyl tert-butyl ether	<1.0		1.0		ug/L			05/11/16 10:58	
Styrene	<1.0		1.0		ug/L			05/11/16 10:58	
1,1,2,2-Tetrachloroethane	<1.0	UJ	1.0	0.40				05/11/16 10:58	
Tetrachloroethene	<1.0	UJ	1.0	0.37				05/11/16 10:58	
Toluene	4.6	J 	0.50		ug/L			05/11/16 10:58	
trans-1,2-Dichloroethene	<1.0	UJ	1.0	0.35				05/11/16 10:58	
trans-1,3-Dichloropropene	<1.0		1.0	0.36	-			05/11/16 10:58	
1,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/11/16 10:58	
1,1,1-Trichloroethane	<1.0		1.0	0.38				05/11/16 10:58	
1,1,2-Trichloroethane	<1.0		1.0	0.35	_			05/11/16 10:58	
Trichloroethene	<0.50		0.50	0.16	-			05/11/16 10:58	
Trichlorofluoromethane	<1.0		1.0	0.43				05/11/16 10:58	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	/	1.0	0.46	-			05/11/16 10:58	
Vinyl chloride	< 0.50	V	0.50		ug/L			05/11/16 10:58	
Xylenes, Total	12	J	1.0	0.22	ug/L			05/11/16 10:58	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1 Date Collected: 04/28/16 08:22 **Matrix: Water** Date Received: 04/28/16 16:05

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85	71 - 120		05/11/16 10:58	1
Dibromofluoromethane	39 X	70 - 120		05/11/16 10:58	1
1,2-Dichloroethane-d4 (Surr)	103	71 - 127		05/11/16 10:58	1
Toluene-d8 (Surr)	79	75 - 120		05/11/16 10:58	1

Mothod: 9270D Somiyolatila	Organia Ca	mnoundo	(CC/MS)						
Method: 8270D - Semivolatile Analyte		Qualifier	(GC/MS) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	7.4		0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acenaphthylene	<0.82		0.82	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acetophenone	1.3	J	4.1	0.54	ug/L		05/03/16 09:31	05/06/16 00:42	1
Anthracene	<0.82		0.82	0.27	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]pyrene	<0.16		0.16	0.081	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[b]fluoranthene	<0.16		0.16	0.066	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[g,h,i]perylene	<0.82		0.82	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-ethylhexyl) phthalate	<8.2		8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.44	ug/L		05/03/16 09:31	05/06/16 00:42	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		05/03/16 09:31	05/06/16 00:42	1
Carbazole	6.6		4.1	0.29	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloroaniline	4.1	J 🖟	8.2	1.7	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloro-3-methylphenol	<8.2		8.2	1.9	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chlorophenol	<4.1		4.1	0.46	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.52	ug/L		05/03/16 09:31	05/06/16 00:42	1
Chrysene	<0.41		0.41	0.056	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenz(a,h)anthracene	<0.25		0.25	0.042	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenzofuran	1.1	J	1.6	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dichlorophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
Diethyl phthalate	<1.6		1.6	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dimethylphenol	4.4	J	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dimethyl phthalate	<1.6		1.6	0.26	ug/L		05/03/16 09:31	05/06/16 00:42	1
Di-n-butyl phthalate	<4.1		4.1	0.60	_		05/03/16 09:31	05/06/16 00:42	1
4,6-Dinitro-2-methylphenol	<16		16		ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrophenol	<16	*	16		ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrotoluene	<0.82		0.82	0.20	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,6-Dinitrotoluene	<0.41		0.41	0.060	_		05/03/16 09:31	05/06/16 00:42	1
Di-n-octyl phthalate	<8.2		8.2	0.86	_		05/03/16 09:31	05/06/16 00:42	1
Fluoranthene	<0.82		0.82	0.37			05/03/16 09:31	05/06/16 00:42	1
Fluorene	2.1		0.82	0.20	_		05/03/16 09:31	05/06/16 00:42	1
Hexachlorobenzene	<0.41		0.41	0.065			05/03/16 09:31		1
Hexachlorobutadiene	<4.1		4.1	0.42			05/03/16 09:31	05/06/16 00:42	1
Hexachlorocyclopentadiene	<16	UJ	16		ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachloroethane	<4.1		4.1	0.49			05/03/16 09:31	05/06/16 00:42	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061			05/03/16 09:31	05/06/16 00:42	1
Isophorone	<1.6		1.6	0.31	•		05/03/16 09:31	05/06/16 00:42	1
2-Methylnaphthalene	5.1		0.41	0.053	_			05/06/16 00:42	1

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-1-GW-04282016 Lab Sample ID: 500-110872-1

Date Collected: 04/28/16 08:22 **Matrix: Water**

Method: 8270D - Semivola	tile Organic Compoun	ds (GC/MS) (Cd	ontinued)				
Analyte	Result Qualifier		MDL		D	Prepared	Analyzed	Dil Fa
2-Methylphenol	1.4 J	1.6	0.25	ug/L		05/03/16 09:31		
3 & 4 Methylphenol	16	1.6	0.37	_		05/03/16 09:31	05/06/16 00:42	
Naphthalene	150 E J	0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	
2-Nitroaniline	<4.1	4.1	1.1	ug/L		05/03/16 09:31	05/06/16 00:42	
3-Nitroaniline	<8.2 🖊 UJ	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	
I-Nitroaniline	<8.2	8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	
litrobenzene	<0.82	0.82	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	
2-Nitrophenol	<8.2	8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	
-Nitrophenol	<16 /	16	6.1	ug/L		05/03/16 09:31	05/06/16 00:42	
I-Nitrosodi-n-propylamine	<0.41	0.41	0.13	ug/L		05/03/16 09:31	05/06/16 00:42	
I-Nitrosodiphenylamine	<0.82	0.82	0.30	_		05/03/16 09:31	05/06/16 00:42	
2,2'-oxybis[1-chloropropane]	<1.6	1.6	0.31			05/03/16 09:31	05/06/16 00:42	
Pentachlorophenol	<16	16		ug/L		05/03/16 09:31	05/06/16 00:42	
Phenanthrene	1.1	0.82	0.25	_		05/03/16 09:31		
Phenol	30	4.1	0.55			05/03/16 09:31		
Pyrene	<0.82	0.82	0.35	_		05/03/16 09:31		
2,4,5-Trichlorophenol	<8.2	8.2		ug/L		05/03/16 09:31		
	<4.1	4.1				05/03/16 09:31		
1,4,6-Trichlorophenol	1	16	0.59	_				
Benzaldehyde				ug/L		05/03/16 09:31		
Caprolactam	<8.2 [†]	8.2		ug/L		05/03/16 09:31		
Atrazine	<4.1	4.1	0.51	_			05/06/16 00:42	
,1'-Biphenyl	<4.1	4.1	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	
urrogate	%Recovery Qualifie	r Limits				Prepared	Analyzed	Dil Fa
P-Fluorobiphenyl	60	30 - 123				05/03/16 09:31	05/06/16 00:42	
?-Fluorophenol (Surr)	47	30 - 110				05/03/16 09:31	05/06/16 00:42	
litrobenzene-d5 (Surr)	59	33 - 139				05/03/16 09:31	05/06/16 00:42	
Phenol-d5 (Surr)	42	20 - 100				05/03/16 09:31	05/06/16 00:42	
erphenyl-d14 (Surr)	96	42 - 150				05/03/16 09:31	05/06/16 00:42	
2,4,6-Tribromophenol (Surr)	114	30 - 150				05/03/16 09:31	05/06/16 00:42	
Method: 8081B - Organoch	olorine Pesticides (GC)						
Analyte	Result Qualifie	,	MDL	Unit	D	Prepared	Analyzed	Dil Fa
ldrin	<0.041	0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 12:42	
llpha-BHC	<0.041	0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 12:42	
llpha-Chlordane	<0.041	0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 12:42	
eta-BHC	<0.041	0.041	0.010	ug/L		04/29/16 10:36	05/03/16 12:42	
,4'-DDD	<0.041	0.041	0.014			04/29/16 10:36	05/03/16 12:42	
,,4'-DDE	<0.041	0.041	0.0039			04/29/16 10:36	05/03/16 12:42	
,,4'-DDT	<0.041	0.041	0.0033				05/03/16 12:42	
lelta-BHC	<0.041	0.041	0.011				05/03/16 12:42	
Dieldrin	<0.041	0.041	0.013				05/03/16 12:42	
indosulfan I	<0.041	0.041	0.0042				05/03/16 12:42	
ndosulfan II	<0.041	0.041	0.0042				05/03/16 12:42	
indosulfan sulfate		0.041	0.0029	-			05/03/16 12:42	
	<0.041							
ndrin	<0.041	0.041	0.015				05/03/16 12:42	
indrin aldehyde	<0.041	0.041	0.0084	-			05/03/16 12:42	
Endrin ketone	<0.041	0.041	0.017				05/03/16 12:42	
gamma-BHC (Lindane)	<0.041	0.041	0.0057				05/03/16 12:42	
gamma-Chlordane	<0.041	0.041	0.0074	110/		D4/20/16 10:36	05/03/16 12:42	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 08:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 8081B - Organochlori Analyte		Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.041	quannon	0.041	0.014			04/29/16 10:36	05/03/16 12:42	- Dill tuc
Heptachlor epoxide	<0.041		0.041	0.014	-			05/03/16 12:42	
Methoxychlor	<0.082		0.082	0.023	-			05/03/16 12:42	
oxaphene	<0.41		0.41		ug/L			05/03/16 12:42	
oxapitette	VO.41		0.41	0.20	ug/L		04/29/10 10:30	03/03/10 12.42	'
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		30 - 143				04/29/16 10:36	05/03/16 12:42	1
⁻ etrachloro-m-xylene	96		30 - 120				04/29/16 10:36	05/03/16 12:42	1
Asthody 2022 A. Dolyahlarinat	ad Dinham	de (DCRe)	hy Can Chy	.c.m.c.t.c.aw	anh.				
Method: 8082A - Polychlorinat Analyte		Qualifier	Dy Gas Chi RL	_	apny Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ua/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1221	<0.41		0.41		ug/L			05/03/16 19:10	1
PCB-1232	<0.41		0.41		ug/L			05/03/16 19:10	1
PCB-1242	<0.41		0.41		ug/L			05/03/16 19:10	
CB-1248	<0.41		0.41		ug/L			05/03/16 19:10	1
CB-1254	<0.41		0.41		ug/L			05/03/16 19:10	
PCB-1260	<0.41		0.41	0.071	•			05/03/16 19:10	1
					3				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
etrachloro-m-xylene	58		30 - 127				04/29/16 10:36	05/03/16 19:10	1
OCB Decachlorobiphenyl	57		30 - 150				04/29/16 10:36	05/03/16 19:10	1
Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Numinum	0.20	⊮ J	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:01	1
ntimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:01	1
rsenic	< 0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:01	1
Barium	0.88		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:01	1
Sadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:01	1
Calcium	930		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:41	5
Chromium	< 0.010		0.010	0.0024	_		04/29/16 08:31	04/29/16 19:01	1
Cobalt	<0.0050		0.0050	0.00096	-			04/29/16 19:01	1
Copper	0.0070		0.010	0.0022				04/29/16 19:01	1
on	<0.20		0.20		mg/L			04/29/16 19:01	1
ead	0.0041	J	0.0050	0.0024	-			05/03/16 17:24	1
/lagnesium	0.059		0.10	0.034	-			04/29/16 19:01	1
langanese	0.0052		0.010	0.0034	_			04/29/16 19:01	1
lickel	0.017	-	0.010	0.0031	•			04/29/16 19:01	1
Potassium	52		0.50		mg/L			04/29/16 19:01	1
selenium	< 0.010	N	0.010	0.0046	_			04/29/16 19:01	1
Silver	<0.0050		0.0050	0.0013	•			04/29/16 19:01	1
Sodium	250		1.0		mg/L			04/29/16 19:01	1
Thallium	<0.010		0.010	0.0028	_			04/29/16 19:01	1
/anadium	<0.0050		0.0050	0.0019	_			04/29/16 19:01	1
Zinc	0.032		0.020	0.0090				04/29/16 19:01	
arro	0.032		0.020	0.0000	9, =		5 1120/10 00:01	5 11 201 10 10.01	
Method: 6010C - Metals (ICP) -		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 08:22 Matrix: Water Date Received: 04/28/16 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:06	-
Arsenic	0.0055	J	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	
Barium	0.78		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:06	
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:06	•
Calcium	790		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:51	
Chromium	< 0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:06	
Cobalt	< 0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:06	
Copper	0.0047	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	
Iron	0.21		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:06	
Lead	0.0028	J	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:30	
Magnesium	<0.10		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:06	,
Manganese	< 0.010		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:06	
Nickel	0.016		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	
Potassium	48		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:06	
Selenium	0.0051	J 1	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:06	
Silver	< 0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:06	
Sodium	230		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:06	
Thallium	< 0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:06	
Vanadium	< 0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:06	
Zinc	0.013	J	0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:06	
Method: 7470A - Mercury (CVA	,								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:10	•
Method: 7470A - Mercury (CVA Analyte		lved Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
	0.00013		0.00020	0.00011			•	05/04/16 14:25	Dilla
Mercury	0.00013	J	0.00020	0.00011	IIIg/L		05/02/10 15.45	05/04/10 14.25	
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Sulfide	2.5		1.0	0.22	0			05/03/16 05:24	•
Sulfate	18		5.0		mg/L			05/06/16 09:10	•
Total Organic Carbon - Duplicates	26		1.0		mg/L			05/08/16 17:44	
Nitrogen, Nitrate	0.050	J	0.10	0.045	_			05/03/16 14:20	
Total Suspended Solids	8.5	,	5.0	1.6	mg/L			05/03/16 11:28	
Ammonia	53	F	5.0		mg/L		05/09/16 19:05	05/09/16 22:00	2
Nitrogen, Nitrite < 0.020	0.0066	JB UB	0.020	0.0032				04/29/16 14:51	
Nitrogen, Nitrate Nitrite	0.057	J	0.10	0.045	ma/L			05/02/16 19:19	

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 10:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 8260B - Volatile Org Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Acetone	85	D	50	17	ug/L			05/11/16 11:26	1
Benzene	630	D	5.0	1.5	ug/L			05/11/16 11:26	1
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 11:26	1
Bromoform	<10		10	4.8	ug/L			05/11/16 11:26	1
Bromomethane	<20	UJ	20	8.0	ug/L			05/11/16 11:26	1
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 11:26	1
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 11:26	1
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 11:26	1
Chloroethane	<10		10	5.1	ug/L			05/11/16 11:26	1
Chloroform	<10		10	3.7	ug/L			05/11/16 11:26	1
Chloromethane	<10		10		ug/L			05/11/16 11:26	1
cis-1,2-Dichloroethene	54	JD	10		ug/L			05/11/16 11:26	1
cis-1,3-Dichloropropene	<10		10		ug/L			05/11/16 11:26	<u>.</u> 1
Cyclohexane	<10		10		ug/L			05/11/16 11:26	1
Dibromochloromethane	<10		10		ug/L			05/11/16 11:26	1
1,2-Dibromo-3-Chloropropane	<50		50		ug/L			05/11/16 11:26	<u>.</u> 1
1,2-Dibromoethane	<10		10		ug/L			05/11/16 11:26	1
1,2-Dichlorobenzene	17		10		ug/L			05/11/16 11:26	1
1,3-Dichlorobenzene	<10		10		ug/L			05/11/16 11:26	
1,4-Dichlorobenzene	<10		10		ug/L			05/11/16 11:26	1
Dichlorodifluoromethane	<20		20		ug/L			05/11/16 11:26	1
1,1-Dichloroethane	52	JD	10		ug/L			05/11/16 11:26	
1,2-Dichloroethane	<10	JD	10		ug/L			05/11/16 11:26	1
1,1-Dichloroethene	<10		10		ug/L			05/11/16 11:26	1
1,2-Dichloropropane	<10		10		ug/L			05/11/16 11:26	
2-Hexanone	<50		50		ug/L			05/11/16 11:26	1
Isopropylbenzene	97	D	10		ug/L			05/11/16 11:26	1
Methyl acetate	<50	U	50		ug/L			05/11/16 11:26	
Methylcyclohexane	<10		10		ug/L			05/11/16 11:26	1
Methylene Chloride	<50		50		ug/L			05/11/16 11:26	1
Methyl Ethyl Ketone	60		50		ug/L			05/11/16 11:26	
methyl isobutyl ketone	<50	D	50		ug/L			05/11/16 11:26	1
Methyl tert-butyl ether	<10		10		ug/L			05/11/16 11:26	1
Styrene Styre and Styrene	<10		10		ug/L			05/11/16 11:26	
1,1,2,2-Tetrachloroethane	<10	UJ	10		ug/L			05/11/16 11:26	1
Tetrachloroethene	<10		10		ug/L			05/11/16 11:26	1
trans-1,2-Dichloroethene	<10		10		ug/L			05/11/16 11:26	
	<10		10		ug/L ug/L			05/11/16 11:26	1
trans-1,3-Dichloropropene 1,2,4-Trichlorobenzene	<10		10		_			05/11/16 11:26	1
1,1,1-Trichloroethane	<10		10		ug/L ug/L			05/11/16 11:26	1 1
1,1,2-Trichloroethane	<10		10		_			05/11/16 11:26	1
Trichloroethene	<10 <5.0				ug/L				
Trichlorofluoromethane			5.0		ug/L			05/11/16 11:26 05/11/16 11:26	1
	<10		10		ug/L				1
1,1,2-Trichloro-1,2,2-trifluoroethane Vinyl chloride	<10 15	D	10 5.0		ug/L ug/L			05/11/16 11:26 05/11/16 11:26	1 1
,				2.0	~J. =		Ducasa		
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	<u>Limits</u> 71 - 120				Prepared	Analyzed 05/11/16 11:26	Dil Fa
Dibromofluoromethane	86		71 - 120 70 - 120					05/11/16 11:26	1

TestAmerica Job ID: 500-110872-1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 10:22 Matrix: Water Date Received: 04/28/16 16:05

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		71 - 127					05/11/16 11:26	10
Toluene-d8 (Surr)	89		75 - 120					05/11/16 11:26	10
Method: 8260B - Volatile C	Organic Compo	unds (GC/	MS) - DL						
Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	2500	D	50	18	ug/L			05/11/16 11:54	100
Toluene	8100	JD	50	15	ug/L			05/11/16 11:54	100
Xylenes, Total	17000	D	100	22	ug/L			05/11/16 11:54	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		71 - 120					05/11/16 11:54	100
Dibromofluoromethane	91		70 - 120					05/11/16 11:54	100
1,2-Dichloroethane-d4 (Surr)	103		71 - 127					05/11/16 11:54	100
Toluene-d8 (Surr)	93		75 - 120					05/11/16 11:54	100
Method: 8270D - Semivola	tile Organic Co	mpounds	(GC/MS)						
Analyte	•	Qualifier	` ŔĹ	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	1.4	JD	4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acenaphthylene	4.5	D	4.1	1.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acetophenone	<20		20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
Anthracene	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		05/03/16 09:31	05/06/16 01:08	5

Acenaphthene 1.4 JD 4.1 1.3 ug/L 05/03/16 09:31 05/06/16 Acenaphthylene 4.5 D 4.1 1.1 ug/L 05/03/16 09:31 05/06/16 Acetophenone <20	eu Dii Fac
Acetophenone <20 20 2.7 ug/L 05/03/16 09:31 05/06/16 Anthracene <4.1 4.1 1.4 ug/L 05/03/16 09:31 05/06/16 Benzo[a]anthracene <0.81 0.81 0.23 ug/L 05/03/16 09:31 05/06/16 Benzo[b]fluoranthene <0.81 0.81 0.40 ug/L 05/03/16 09:31 05/06/16 Benzo[g,h,i]perylene <4.1 4.1 1.5 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene <0.81 0.81 0.33 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene <0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene <0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethoxy)methane <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethyl)ether <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 Bis(2-bloroethyl) ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 Carbazole <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
Anthracene < 44.1 4.1 1.4 ug/L 05/03/16 09:31 05/06/16 Benzo[a]anthracene < 0.81 0.81 0.23 ug/L 05/03/16 09:31 05/06/16 Benzo[a]pyrene < 0.81 0.81 0.81 0.40 ug/L 05/03/16 09:31 05/06/16 Benzo[b]fluoranthene < 0.81 0.81 0.33 ug/L 05/03/16 09:31 05/06/16 Benzo[b]fluoranthene < 4.1 4.1 1.5 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene < 0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene < 0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Benzo[k]fluoranthene < 0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethoxy)methane < 8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate < 41 41 7.0 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate < 41 41 7.0 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate < 8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate < 8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Garbazole < 20 20 1.4 ug/L 05/03/16 09:31 05/06/16 Garbazole < 20 20 1.4 ug/L 05/03/16 09:31 05/06/16 Garbazole < 41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 Garbazole < 41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 Garbazole < 41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 Garbazole < 8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16 Garbazole < 8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16 Garbazole < 8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16 Garbazole < 8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16 Garbazole < 8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16 Garbazole < 0.00 ug/L 05/03/16 09:31 05/06/16 Gar	1:08 5
Benzo[a]anthracene <0.81	1:08 5
Benzo[a]pyrene <0.81	1:08 5
Benzo[b]fluoranthene <0.81	1:08 5
Benzo[g,h,i]perylene <4.1	1:08 5
Benzo[k]fluoranthene <0.81 0.81 0.26 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethoxy)methane <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethyl)ether <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 4-Bromophenyl phenyl ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
Bis(2-chloroethoxy)methane <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-chloroethyl)ether <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 4-Bromophenyl phenyl ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
Bis(2-chloroethyl)ether <8.1 8.1 1.2 ug/L 05/03/16 09:31 05/06/16 Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 4-Bromophenyl phenyl ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
Bis(2-ethylhexyl) phthalate <41 41 7.0 ug/L 05/03/16 09:31 05/06/16 4-Bromophenyl phenyl ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
4-Bromophenyl phenyl ether <20 20 2.2 ug/L 05/03/16 09:31 05/06/16 Butyl benzyl phthalate <8.1 8.1 2.0 ug/L 05/03/16 09:31 05/06/16 Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 ✓ UJ 41 8.2 ug/L 05/03/16 09:31 05/06/16 4-Chloro-3-methylphenol <41 41 9.4 ug/L 05/03/16 09:31 05/06/16 2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
Butyl benzyl phthalate <8.1	1:08 5
Carbazole <20 20 1.4 ug/L 05/03/16 09:31 05/06/16 4-Chloroaniline <41 ✓ UJ	1:08 5
4-Chloroaniline < 41	1:08 5
4-Chloro-3-methylphenol <41	1:08 5
2-Chloronaphthalene <8.1 8.1 0.96 ug/L 05/03/16 09:31 05/06/16	1:08 5
-	1:08 5
0.011	1:08 5
2-Chlorophenol <20 20 2.3 ug/L 05/03/16 09:31 05/06/16	1:08 5
4-Chlorophenyl phenyl ether <20 20 2.6 ug/L 05/03/16 09:31 05/06/16	1:08 5
Chrysene <2.0 2.0 0.28 ug/L 05/03/16 09:31 05/06/16	1:08 5
Dibenz(a,h)anthracene <1.2 1.2 0.21 ug/L 05/03/16 09:31 05/06/16	1:08 5
Dibenzofuran <8.1 8.1 1.1 ug/L 05/03/16 09:31 05/06/16	1:08 5
3,3'-Dichlorobenzidine <20 20 7.0 ug/L 05/03/16 09:31 05/06/16	1:08 5
2,4-Dichlorophenol <41 41 11 ug/L 05/03/16 09:31 05/06/16	1:08 5
Diethyl phthalate 33 D 8.1 1.5 ug/L 05/03/16 09:31 05/06/16	1:08 5
2,4-Dimethylphenol 37 JD 41 7.3 ug/L 05/03/16 09:31 05/06/16	1:08 5
Dimethyl phthalate <8.1 8.1 1.3 ug/L 05/03/16 09:31 05/06/16	1:08 5
Di-n-butyl phthalate 5.5 J D 20 3.0 ug/L 05/03/16 09:31 05/06/16	1:08 5
4,6-Dinitro-2-methylphenol <81 81 24 ug/L 05/03/16 09:31 05/06/16	1:08 5
2,4-Dinitrophenol <81 81 35 ug/L 05/03/16 09:31 05/06/16	1:08 5
2,4-Dinitrotoluene <4.1 4.1 1.0 ug/L 05/03/16 09:31 05/06/16	1:08 5
2,6-Dinitrotoluene <2.0 2.0 0.30 ug/L 05/03/16 09:31 05/06/16	1:08 5

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2 Date Collected: 04/28/16 10:22 **Matrix: Water**

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatilo Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<41		41	4.3	ug/L		05/03/16 09:31	05/06/16 01:08	- 5
Fluoranthene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	
Fluorene	1.8	JD	4.1	0.99	ug/L		05/03/16 09:31	05/06/16 01:08	į
Hexachlorobenzene	<2.0		2.0	0.32	ug/L		05/03/16 09:31	05/06/16 01:08	
Hexachlorobutadiene	<20		20	2.1	ug/L		05/03/16 09:31	05/06/16 01:08	į
Hexachlorocyclopentadiene	<81	UJ	81	26	ug/L		05/03/16 09:31	05/06/16 01:08	į
Hexachloroethane	<20		20	2.4	ug/L		05/03/16 09:31	05/06/16 01:08	
Indeno[1,2,3-cd]pyrene	<0.81		0.81	0.30	ug/L		05/03/16 09:31	05/06/16 01:08	į
Isophorone	5.4	J D	8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	į
2-Methylnaphthalene	22	D	2.0	0.27	ug/L		05/03/16 09:31	05/06/16 01:08	
2-Methylphenol	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	į
3 & 4 Methylphenol	210	D	8.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	į
Naphthalene	250	D	4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	
2-Nitroaniline	<20		20	5.2	ug/L		05/03/16 09:31	05/06/16 01:08	Ę
3-Nitroaniline	<41	/ UJ	41	7.3	ug/L		05/03/16 09:31	05/06/16 01:08	Ę
4-Nitroaniline	<41		41	6.8	ug/L		05/03/16 09:31	05/06/16 01:08	
Nitrobenzene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	Ę
2-Nitrophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	Ę
4-Nitrophenol	<81	*	81	30	ug/L		05/03/16 09:31	05/06/16 01:08	
N-Nitrosodi-n-propylamine	<2.0		2.0	0.63	ug/L		05/03/16 09:31	05/06/16 01:08	Ę
N-Nitrosodiphenylamine	14	D	4.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	į
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	
Pentachlorophenol	65	J D	81	16	ug/L		05/03/16 09:31	05/06/16 01:08	į
Phenanthrene	<4.1		4.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	į
Phenol	56	JD	20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	
Pyrene	<4.1		4.1	1.7	ug/L		05/03/16 09:31	05/06/16 01:08	į
2,4,5-Trichlorophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	į
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		05/03/16 09:31	05/06/16 01:08	
Benzaldehyde	<81	† UJ	81	62	ug/L		05/03/16 09:31	05/06/16 01:08	į
Caprolactam	<41	ŧ	41	6.1	ug/L		05/03/16 09:31	05/06/16 01:08	į
Atrazine	<20		20	2.5	ug/L		05/03/16 09:31	05/06/16 01:08	
1,1'-Biphenyl	3.1	JD	20	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	į
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	92	_	30 - 123				05/03/16 09:31	05/06/16 01:08	
2-Fluorophenol (Surr)	55		30 - 110					05/06/16 01:08	
Nitrobenzene-d5 (Surr)	84		33 - 139					05/06/16 01:08	
Phenol-d5 (Surr)	50		20 - 100				05/03/16 09:31	05/06/16 01:08	
Terphenyl-d14 (Surr)	109		42 - 150				05/03/16 09:31	05/06/16 01:08	
2,4,6-Tribromophenol (Surr)	128		30 - 150				05/03/16 09:31	05/06/16 01:08	

Method:	8081B -	Organochlorine Pesticides	(GC)

morme resultides (GC)							
Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<0.041	0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.010	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.0039	ug/L		04/29/16 10:36	05/03/16 13:02	1
<0.041	0.041	0.0033	ug/L		04/29/16 10:36	05/03/16 13:02	1
	Result Qualifier <0.041 <0.041 <0.041 <0.041 <0.041 <0.041	Result Qualifier RL <0.041	Result Qualifier RL MDL <0.041	Result Qualifier RL 0.041 MDL 0.0054 Unit ug/L ug/L ug/L <0.041	Result Qualifier RL MDL Unit D <0.041	Result Qualifier RL MDL Unit D Prepared <0.041	Result Qualifier RL MDL Unit D Prepared Analyzed <0.041

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Nickel

Date Collected: 04/28/16 10:22 Matrix: Water

Method: 8081B - Organoo					11-27	_	D	A a l	D:: -
Analyte delta-BHC	Result <0.041	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
			0.041	0.011	ug/L		04/29/16 10:36	05/03/16 13:02	
Dieldrin	<0.041		0.041	0.013			04/29/16 10:36	05/03/16 13:02	
Endosulfan I	<0.041		0.041	0.0042	•		04/29/16 10:36	05/03/16 13:02	
Endosulfan II	<0.041		0.041	0.0029	-				
Endosulfan sulfate	<0.041		0.041	0.012	-		04/29/16 10:36	05/03/16 13:02	
Endrin	<0.041		0.041	0.015	_			05/03/16 13:02	
Endrin aldehyde	<0.041		0.041	0.0084	_			05/03/16 13:02	
Endrin ketone	<0.041		0.041	0.017	_			05/03/16 13:02	
gamma-BHC (Lindane)	<0.041		0.041	0.0057	_			05/03/16 13:02	
gamma-Chlordane	<0.041		0.041	0.0074	-			05/03/16 13:02	
Heptachlor	<0.041		0.041	0.014	_			05/03/16 13:02	
Heptachlor epoxide	<0.041		0.041	0.014	_			05/03/16 13:02	
Methoxychlor	<0.082		0.082	0.024	-			05/03/16 13:02	
Toxaphene	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 13:02	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	34		30 - 143				04/29/16 10:36	05/03/16 13:02	
Tetrachloro-m-xylene	622	X	30 - 120				04/29/16 10:36	05/03/16 13:02	
Method: 8082A - Polychic	ringted Binhon	de (BCRe)	hy Gae Chi	omatoar	anhy				
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
PCB-1016	<2.0		2.0		ug/L	=	04/29/16 10:36	05/04/16 10:28	
PCB-1221	<2.0		2.0		ug/L		04/29/16 10:36	05/04/16 10:28	
PCB-1232	<2.0		2.0		ug/L		04/29/16 10:36		
PCB-1242	<2.0		2.0		ug/L		04/29/16 10:36	05/04/16 10:28	
PCB-1248	<2.0		2.0		ug/L			05/04/16 10:28	
PCB-1254	<2.0		2.0		ug/L			05/04/16 10:28	
PCB-1260	<2.0		2.0		ug/L			05/04/16 10:28	
	2/5	0 ""	,						5.7.5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	71		30 - 127					05/04/16 10:28	
DCB Decachlorobiphenyl Method: 6010C - Metals (I	39 ICP)		30 - 150				04/29/16 10:36	05/04/16 10:28	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20	N	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:11	
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:11	
Arsenic	0.0087	J	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:11	
Barium	0.24		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:11	
							04/29/16 08:31	04/00/40 40:44	
Beryllium	< 0.0040		0.0040	0.00085	mg/L		0-1/20/10 00.01	04/29/16 19:11	
	<0.0040 <0.0020		0.0040 0.0020		-		04/29/16 08:31		
Cadmium	<0.0020			0.00094	mg/L		04/29/16 08:31		
Cadmium Calcium	<0.0020 110	J	0.0020	0.00094 0.059	mg/L mg/L		04/29/16 08:31 04/29/16 08:31	04/29/16 19:11	
Cadmium Calcium Chromium	<0.0020 110 0.0044		0.0020 0.20 0.010	0.00094 0.059 0.0024	mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11	
Cadmium Calcium Chromium Cobalt	<0.0020 110 0.0044 0.0027	J	0.0020 0.20 0.010 0.0050	0.00094 0.059 0.0024 0.00096	mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11	
Cadmium Calcium Chromium Cobalt Copper	<0.0020 110 0.0044 0.0027 0.0022	J	0.0020 0.20 0.010 0.0050 0.010	0.00094 0.059 0.0024 0.00096 0.0022	mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11	
Cadmium Calcium Chromium Cobalt Copper	<0.0020 110 0.0044 0.0027 0.0022 7.4	J	0.0020 0.20 0.010 0.0050 0.010 0.20	0.00094 0.059 0.0024 0.00096 0.0022 0.10	mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11	
Cadmium Calcium Chromium Cobalt Copper Iron Lead	<0.0020 110 0.0044 0.0027 0.0022 7.4 <0.0050	J	0.0020 0.20 0.010 0.0050 0.010 0.20 0.0050	0.00094 0.059 0.0024 0.00096 0.0022 0.10 0.0024	mg/L mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 05/03/16 17:35	
Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese	<0.0020 110 0.0044 0.0027 0.0022 7.4	J	0.0020 0.20 0.010 0.0050 0.010 0.20	0.00094 0.059 0.0024 0.00096 0.0022 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 04/29/16 19:11 05/03/16 17:35	

04/29/16 08:31 04/29/16 19:11

0.011

0.010 0.0031 mg/L

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 10:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) (C Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Potassium	64	Quanner	0.50		mg/L		04/29/16 08:31	04/29/16 19:11	Dilla
Selenium	<0.010	. 📈	0.010	0.0046	-			04/29/16 19:11	
Silver	< 0.0050		0.0050	0.0043	_			04/29/16 19:11	
Sodium	230		1.0		mg/L			04/29/16 19:11	
Thallium	< 0.010		0.010	0.0028	-			04/29/16 19:11	
Vanadium	0.0035	1	0.0050	0.0020	_			04/29/16 19:11	
Zinc	<0.020		0.020	0.0090	-			04/29/16 19:11	
Method: 6010C - Metals (ICP) - E	Dissolvad								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20		0.20	0.062			04/29/16 08:31	04/29/16 19:25	- Dil 1 G
Antimony	<0.020		0.020	0.0064	•		04/29/16 08:31		
Arsenic	0.0049	1	0.010	0.0031	-		04/29/16 08:31		
Barium	0.0043		0.010	0.0022			04/29/16 08:31		
Beryllium	<0.0040		0.0040	0.00085	•		04/29/16 08:31		
Cadmium	<0.0020		0.0020	0.00094	•		04/29/16 08:31		
Calcium	110		0.20	0.059	-		04/29/16 08:31		
Chromium	0.0035	1	0.010	0.0024	-		04/29/16 08:31		
Cobalt	0.0033		0.0050	0.00024	-		04/29/16 08:31		
Copper	<0.017		0.010	0.0022				04/29/16 19:25	
• •	6.7		0.010		mg/L		04/29/16 08:31		
l ron Lead	< 0.0050		0.20	0.0024	-		04/29/16 08:31		
	43		0.0030	0.0024	-		04/29/16 08:31		
Magnesium	0.35		0.10	0.034	_		04/29/16 08:31		
Manganese Nickel	0.011		0.010	0.0034	•		04/29/16 08:31		
					mg/L				
Potassium Salanium	66 < 0.010	^	0.50 0.010		_			04/29/16 19:25	
Selenium				0.0046	•		04/29/16 08:31		
Silver	<0.0050		0.0050	0.0013	J			04/29/16 19:25	
Sodium	230		1.0		mg/L			04/29/16 19:25	
Thallium	<0.010		0.010	0.0028	_			04/29/16 19:25	
Vanadium 	0.0033	. J	0.0050	0.0019				04/29/16 19:25	
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:25	
Method: 7470A - Mercury (CVAA	,	0 115	5.			_			5.1.5
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:27	
	•		D.	MDI	1114		Durana	A I I	D!! E-
		Qualifier				Б			Dil Fa
Method: 7470A - Mercury (CVAAAnalyte Mercury General Chemistry	•	Qualifier	RL 0.00020	MDL 0.00011		<u>D</u>	Prepared 05/02/16 13:45	Analyzed 05/04/16 14:30	_
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil I
Sulfide	1.7		1.0	0.22	mg/L			05/03/16 05:27	-
Sulfate	390		100	40	mg/L			05/06/16 09:11	2
Total Organic Carbon - Duplicates	67		4.0		mg/L			05/08/16 18:24	
Nitrogen, Nitrate	<0.10		0.10	0.045	-			05/03/16 14:20	
Total Suspended Solids	14	J	5.0		mg/L			05/03/16 11:31	
Ammonia		B .	4.0		mg/L		05/09/16 19:05	05/09/16 22:09	2
		JB UB	0.020	0.0032				04/29/16 14:52	-

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 10:22 Matrix: Water

Date Received: 04/28/16 16:05

General Chemistry (Continued)

AnalyteResult Nitrogen, Nitrate NitriteQualifierRL 0.10MDL 0.10Unit mg/LD means of mg/LPrepared 0.10Analyzed 0.11 Fac 0.045

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Benzene	160	D	5.0	1.5	ug/L			05/11/16 12:21	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 12:21	10
Bromoform	<10		10	4.8	ug/L			05/11/16 12:21	10
Bromomethane	<20	UJ	20	8.0	ug/L			05/11/16 12:21	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 12:21	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 12:21	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 12:21	10
Chloroethane	26	D	10	5.1	ug/L			05/11/16 12:21	10
Chloroform	<10		10	3.7	ug/L			05/11/16 12:21	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 12:21	10
cis-1,2-Dichloroethene	1100	D	10	4.1	ug/L			05/11/16 12:21	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 12:21	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 12:21	10
Dibromochloromethane	<10		10		ug/L			05/11/16 12:21	10
1,2-Dibromo-3-Chloropropane	<50		50		ug/L			05/11/16 12:21	10
1,2-Dibromoethane	<10		10		ug/L			05/11/16 12:21	10
1,2-Dichlorobenzene	<10		10		ug/L			05/11/16 12:21	10
1,3-Dichlorobenzene	<10		10		ug/L			05/11/16 12:21	10
1,4-Dichlorobenzene	<10		10		ug/L			05/11/16 12:21	10
Dichlorodifluoromethane	<20		20		ug/L			05/11/16 12:21	10
1,2-Dichloroethane	<10		10		ug/L			05/11/16 12:21	10
1,1-Dichloroethene	10		10		ug/L			05/11/16 12:21	10
1,2-Dichloropropane	<10	D	10		ug/L			05/11/16 12:21	10
2-Hexanone	<50		50		ug/L			05/11/16 12:21	1(
Isopropylbenzene	43		10		ug/L			05/11/16 12:21	1(
Methyl acetate	< 50	D	50		ug/L			05/11/16 12:21	10
Methylcyclohexane	<10		10		ug/L			05/11/16 12:21	10
Methyl tert-butyl ether	<10		10		ug/L			05/11/16 12:21	1(
Styrene	<10		10		ug/L			05/11/16 12:21	10
1,1,2,2-Tetrachloroethane	<10		10		ug/L			05/11/16 12:21	10
Tetrachloroethene	680		10		ug/L			05/11/16 12:21	10
		_	10		ug/L			05/11/16 12:21	10
trans-1,2-Dichloroethene trans-1,3-Dichloropropene	23 <10	D	10		•			05/11/16 12:21	10
1,2,4-Trichlorobenzene					ug/L			05/11/16 12:21	
* *	<10		10		ug/L				1(
1,1,1-Trichloroethane	<10		10		ug/L			05/11/16 12:21	10
1,1,2-Trichloroethane	<10		10		ug/L			05/11/16 12:21	10
Trichloroethene	720	D	5.0		ug/L			05/11/16 12:21	1(
Trichlorofluoromethane	<10		10		ug/L			05/11/16 12:21	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10		ug/L			05/11/16 12:21	10
Vinyl chloride	420	D	5.0	2.0	ug/L			05/11/16 12:21	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	93		71 - 120					05/11/16 12:21	1
Dibromofluoromethane	86		70 - 120					05/11/16 12:21	10
1,2-Dichloroethane-d4 (Surr)	97		71 - 127					05/11/16 12:21	10
Toluene-d8 (Surr)	92		75 - 120					05/11/16 12:21	1
Method: 8260B - Volatile Org	anic Compo	unds (GC/	MS) - DL						
Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	4800	D	500	170	ug/L			05/11/16 12:49	100

TestAmerica Job ID: 500-110872-1

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3 Date Collected: 04/28/16 12:40 **Matrix: Water**

4-Chloro-3-methylphenol

4-Chlorophenyl phenyl ether

2-Chloronaphthalene

Dibenz(a,h)anthracene

3,3'-Dichlorobenzidine

2,4-Dichlorophenol

2,4-Dimethylphenol

Dimethyl phthalate

Di-n-butyl phthalate

4,6-Dinitro-2-methylphenol

Diethyl phthalate

2-Chlorophenol

Chrysene

Dibenzofuran

Method: 8260B - Volatile O Analyte		unds (GC/ Qualifier	MS) - DL (Co) Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	3300	D	100	41	ug/L			05/11/16 12:49	100
Ethylbenzene	3400	D	50	18	ug/L			05/11/16 12:49	100
Methylene Chloride	6300	D	500	160	ug/L			05/11/16 12:49	100
Methyl Ethyl Ketone	2700	D	500	210	ug/L			05/11/16 12:49	100
methyl isobutyl ketone	24000	D	5000	2200	ug/L			05/12/16 15:19	1000
Toluene	11000	D	50	15	ug/L			05/11/16 12:49	100
Xylenes, Total	19000	D	100	22	ug/L			05/11/16 12:49	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		71 - 120					05/11/16 12:49	100
4-Bromofluorobenzene (Surr)	90		71 - 120					05/12/16 15:19	1000
Dibromofluoromethane	89		70 - 120					05/11/16 12:49	100
Dibromofluoromethane	90		70 - 120					05/12/16 15:19	1000
1,2-Dichloroethane-d4 (Surr)	103		71 - 127					05/11/16 12:49	100
1,2-Dichloroethane-d4 (Surr)	105		71 - 127					05/12/16 15:19	1000
Toluene-d8 (Surr)	100		75 - 120					05/11/16 12:49	100
Toluene-d8 (Surr)	94		75 - 120					05/12/16 15:19	1000
Method: 8270D - Semivolat	tile Organic Co	mpounds	(GC/MS)						
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<81	UJ	81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acenaphthylene	<81	1	81	22	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acetophenone	<410		410	54	ug/L		05/03/16 09:31	05/06/16 01:35	100
Anthracene	<81		81	27	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]anthracene	<16		16	4.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]pyrene	<16		16	8.0	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[b]fluoranthene	<16		16	6.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[g,h,i]perylene	<81		81	31	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[k]fluoranthene	<16		16	5.2	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethoxy)methane	<160		160	23	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethyl)ether	<160		160	24	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-ethylhexyl) phthalate	<810		810	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Bromophenyl phenyl ether	<410		410	44	ug/L		05/03/16 09:31	05/06/16 01:35	100
Butyl benzyl phthalate	<160		160		ug/L		05/03/16 09:31	05/06/16 01:35	100
Carbazole	<410		410	29	ug/L		05/03/16 09:31	05/06/16 01:35	100
		.					05/00/40 00:04	05/00/40 04:05	400
4-Chloroaniline	<810	<i>î</i>	810	160	ug/L		05/03/16 09:31	05/06/16 01:35	100

100

100

100

100

100

100

100

100

100 100

100

100

100

100

05/03/16 09:31 05/06/16 01:35

05/03/16 09:31 05/06/16 01:35

05/03/16 09:31 05/06/16 01:35

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05/03/16 09:31 05/06/16 01:35

05/03/16 09:31 05/06/16 01:35

05/03/16 09:31 05/06/16 01:35

810

160

410

410

41

24

160

410

810

160

810

160

410

1600

190 ug/L

19 ug/L

45 ug/L

52 ug/L

5.5 ug/L

4.1 ug/L

21 ug/L

140 ug/L

210 ug/L

29 ug/L

150 ug/L

26 ug/L

59 ug/L

480 ug/L

<810

<160

<410

<410

<41

<24

<160

<410

<810

<160

<810

<160

<410

<1600

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3 Date Collected: 04/28/16 12:40 **Matrix: Water** Date Received: 04/28/16 16:05

Method: 8270D - Semivola Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
2,4-Dinitrophenol	<1600	≁ UJ	1600	700	ug/L		05/03/16 09:31	05/06/16 01:35	10
2,4-Dinitrotoluene	<81		81		ug/L		05/03/16 09:31	05/06/16 01:35	10
2,6-Dinitrotoluene	<41		41	6.0	ug/L		05/03/16 09:31	05/06/16 01:35	10
Di-n-octyl phthalate	<810	/	810	85	ug/L		05/03/16 09:31	05/06/16 01:35	10
Fluoranthene	<81		81	37	ug/L		05/03/16 09:31	05/06/16 01:35	10
Fluorene	<81		81	20	ug/L		05/03/16 09:31	05/06/16 01:35	10
Hexachlorobenzene	<41		41	6.5	ug/L		05/03/16 09:31	05/06/16 01:35	10
Hexachlorobutadiene	<410		410	42	ug/L		05/03/16 09:31	05/06/16 01:35	10
Hexachlorocyclopentadiene	<1600		1600	520	ug/L		05/03/16 09:31	05/06/16 01:35	10
Hexachloroethane	<410	/	410	49	ug/L		05/03/16 09:31	05/06/16 01:35	10
Indeno[1,2,3-cd]pyrene	<16	V	16	6.1	ug/L		05/03/16 09:31	05/06/16 01:35	10
2-Methylnaphthalene	46	JD	41	5.3	ug/L		05/03/16 09:31	05/06/16 01:35	10
Naphthalene	160	JD	81	25	ug/L		05/03/16 09:31	05/06/16 01:35	10
2-Nitroaniline	<410	UJ	410	100	ug/L		05/03/16 09:31	05/06/16 01:35	10
3-Nitroaniline	<810		810		ug/L		05/03/16 09:31	05/06/16 01:35	10
4-Nitroaniline	<810		810		ug/L		05/03/16 09:31	05/06/16 01:35	10
Nitrobenzene	<81		81		ug/L		05/03/16 09:31	05/06/16 01:35	10
2-Nitrophenol	<810		810		ug/L		05/03/16 09:31		10
4-Nitrophenol	<1600	· · · · · · · · · · · · · · · · · · ·	1600		ug/L		05/03/16 09:31	05/06/16 01:35	10
N-Nitrosodi-n-propylamine	<41		41		ug/L		05/03/16 09:31		10
N-Nitrosodiphenylamine	<81	/	81		ug/L		05/03/16 09:31		10
2,2'-oxybis[1-chloropropane]	<160		160		ug/L		05/03/16 09:31		10
Pentachlorophenol	1200	Jn	1600		ug/L		05/03/16 09:31		10
Phenanthrene	<81	UJ	81		ug/L		05/03/16 09:31		10
Phenol	4000	JD	410		ug/L		05/03/16 09:31		10
Pyrene	<81	UJ	81		ug/L		05/03/16 09:31		10
2,4,5-Trichlorophenol	<810	UJ	810		ug/L		05/03/16 09:31		10
2,4,6-Trichlorophenol	<410		410		ug/L		05/03/16 09:31		10
Benzaldehyde	<1600	+	1600	1200	-		05/03/16 09:31		10
Caprolactam	<810		810		ug/L		05/03/16 09:31		10
Atrazine	<410	. ,	410		ug/L			05/06/16 01:35	10
1,1'-Biphenyl	<410	/	410		ug/L ug/L			05/06/16 01:35	10
1,1 Dipriority		•		20	ug/L		00/00/10 00:01	00,00,1001.00	
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	0	D	30 - 123				05/03/16 09:31	05/06/16 01:35	10
2-Fluorophenol (Surr)		D	30 - 110				05/03/16 09:31	05/06/16 01:35	10
Nitrobenzene-d5 (Surr)		D	33 - 139				05/03/16 09:31	05/06/16 01:35	10
Phenol-d5 (Surr)	0	D	20 - 100				05/03/16 09:31	05/06/16 01:35	10
Terphenyl-d14 (Surr)	0	D	42 - 150				05/03/16 09:31	05/06/16 01:35	10
2,4,6-Tribromophenol (Surr)	0	D	30 - 150				05/03/16 09:31	05/06/16 01:35	10
Method: 8270D - Semivola Analyte	•	mpounds Qualifier	(GC/MS) - DL	- MDL	Unit	D	Prepared	Analyzed	Dil Fa
Isophorone	19000		810		ug/L	=	05/03/16 09:31		50
2-Methylphenol	7600	JD JD	810		ug/L ug/L			05/07/16 08:32	50
				*	J				
Surrogate	%Recovery		Limits				Prepared 05/00/10	Analyzed	Dil Fa
2-Fluorobiphenyl		D	30 - 123					05/07/16 08:32	50
2-Fluorophenol (Surr)		D	30 - 110					05/07/16 08:32	50
Nitrobenzene-d5 (Surr)	0	D	33 - 139				05/03/16 09:31	05/07/16 08:32	50

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

PCB-1232

PCB-1242

Client Sample	e ID: MW-12-GW-04282016	
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Lab Sample ID: 500-110872-3 Date Collected: 04/28/16 12:40 **Matrix: Water**

Method: 8270D - Semivola	ntile Organic Co	mpounds	(GC/MS) - DI	_ (Contii	nued)				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)		D	20 - 100				05/03/16 09:31	05/07/16 08:32	500
Terphenyl-d14 (Surr)	0	D	42 - 150				05/03/16 09:31	05/07/16 08:32	50
2,4,6-Tribromophenol (Surr)	0	D	30 - 150				05/03/16 09:31	05/07/16 08:32	500
Method: 8270D - Semivola Analyte		mpounds Qualifier	(GC/MS) - DI	_2 MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	510000	JD	16000	3700		<u>-</u>	05/03/16 09:31		10000
C	0/ D anassams		l inside				Duamanad	Analysis	D:/ F-
Surrogate		D Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	-		30 - 123				05/03/16 09:31		1000
2-Fluorophenol (Surr)			30 - 110				05/03/16 09:31		1000
Nitrobenzene-d5 (Surr)		D	33 - 139				05/03/16 09:31		1000
Phenol-d5 (Surr)		D	20 - 100					05/07/16 08:58	1000
Terphenyl-d14 (Surr)		D	42 - 150					05/07/16 08:58	1000
2,4,6-Tribromophenol (Surr)	0	D	30 - 150				05/03/16 09:31	05/07/16 08:58	10000
Method: 8081B - Organoc	hlorine Pesticio	les (GC)							
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Aldrin	<0.20		0.20	0.026	ug/L		04/29/16 10:36	05/03/16 13:21	
alpha-BHC	<0.20		0.20	0.013	ug/L		04/29/16 10:36	05/03/16 13:21	:
alpha-Chlordane	<0.20		0.20	0.022	ug/L		04/29/16 10:36	05/03/16 13:21	
eta-BHC	<0.20		0.20	0.050	ug/L		04/29/16 10:36	05/03/16 13:21	
I,4'-DDD	<0.20		0.20	0.066	ug/L		04/29/16 10:36	05/03/16 13:21	
I,4'-DDE	<0.20		0.20	0.019	ug/L		04/29/16 10:36	05/03/16 13:21	:
1,4'-DDT	<0.20		0.20	0.016	ug/L		04/29/16 10:36	05/03/16 13:21	
delta-BHC	<0.20		0.20	0.051	ug/L		04/29/16 10:36	05/03/16 13:21	;
Dieldrin	<0.20		0.20	0.064	ug/L		04/29/16 10:36	05/03/16 13:21	:
Endosulfan I	<0.20		0.20	0.020	ug/L		04/29/16 10:36	05/03/16 13:21	
Endosulfan II	<0.20		0.20	0.014	ug/L		04/29/16 10:36	05/03/16 13:21	:
Endosulfan sulfate	<0.20		0.20	0.058	ug/L		04/29/16 10:36	05/03/16 13:21	
Endrin	<0.20		0.20	0.070	ug/L		04/29/16 10:36	05/03/16 13:21	
Endrin aldehyde	<0.20		0.20	0.041	ug/L		04/29/16 10:36	05/03/16 13:21	
Endrin ketone	<0.20		0.20	0.084	ug/L		04/29/16 10:36	05/03/16 13:21	
gamma-BHC (Lindane)	<0.20		0.20	0.028	-		04/29/16 10:36	05/03/16 13:21	;
gamma-Chlordane	<0.20		0.20	0.036			04/29/16 10:36	05/03/16 13:21	
- Heptachlor	<0.20		0.20	0.067	_			05/03/16 13:21	
Heptachlor epoxide	<0.20		0.20	0.068				05/03/16 13:21	;
Methoxychlor	<0.40		0.40		ug/L		04/29/16 10:36	05/03/16 13:21	
Toxaphene	<2.0		2.0		ug/L		04/29/16 10:36	05/03/16 13:21	į
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	27		30 - 143					05/03/16 13:21	
Tetrachloro-m-xylene	79		30 - 120					05/03/16 13:21	
Method: 8082A - Polychlo	ringtod Binhon	de (DCBa)	by Gae Chr	matoe=	anhy				
Method: 8082A - Polychio Analyte		(PCBS) Qualifier	by Gas Chro	matogr MDL		D	Prepared	Analyzed	Dil Fa
PCB-1016	<2.0		2.0		ug/L			05/04/16 10:44	
PCB-1221	<2.0		2.0		ug/L			05/04/16 10:44	į
DOD 1000							04/00/40 40:00	05/04/46 40:44	

04/29/16 10:36 05/04/16 10:44

04/29/16 10:36 05/04/16 10:44

2.0

2.0

0.99 ug/L

0.99 ug/L

<2.0

<2.0

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3 Date Collected: 04/28/16 12:40 **Matrix: Water**

lethod: 8082A - Polychlorina			-						
nalyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
CB-1248	<2.0		2.0		O			05/04/16 10:44	
CB-1254	<2.0		2.0		ug/L			05/04/16 10:44	
CB-1260	<2.0		2.0	0.35	ug/L		04/29/16 10:36	05/04/16 10:44	
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
etrachloro-m-xylene	53		30 - 127				04/29/16 10:36	05/04/16 10:44	
CB Decachlorobiphenyl	29	X	30 - 150				04/29/16 10:36	05/04/16 10:44	
lethod: 6010C - Metals (ICP)									
nalyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
luminum	0.15	J /	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:30	
ntimony	0.019	J	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:30	
rsenic	0.030		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:30	
arium	0.091		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	
eryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:30	
admium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:30	
alcium	350		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:30	
hromium	0.067		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:30	
obalt	0.12		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:30	
opper	0.0049	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	
on	42		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:30	
ead	0.011		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:53	
agnesium	300		0.10	0.034	-		04/29/16 08:31	04/29/16 19:30	
anganese	2.6		0.010	0.0034	•		04/29/16 08:31	04/29/16 19:30	
ickel	0.27		0.010	0.0031	Ü		04/29/16 08:31	04/29/16 19:30	
otassium	150		0.50		mg/L		04/29/16 08:31	04/29/16 19:30	
elenium	0.023		0.010	0.0046	-		04/29/16 08:31	05/03/16 17:53	
lver	<0.0050		0.0050	0.0013	-			04/29/16 19:30	
odium	1600		5.0		mg/L		04/29/16 08:31	05/03/16 03:11	
nallium	<0.010		0.010	0.0028	_			04/29/16 19:30	
anadium	0.017		0.0050	0.0019	•			04/29/16 19:30	
nc	0.23		0.020	0.0090				04/29/16 19:30	
lethed: CO4OC - Metale (ICD)	Discolved								
lethod: 6010C - Metals (ICP)		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil
luminum	0.062		0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:36	
ntimony	0.012	•	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:36	
rsenic	0.026		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:36	
arium	0.088		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:36	
eryllium	< 0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:36	
admium	<0.0020		0.0020	0.00094	_		04/29/16 08:31	04/29/16 19:36	
alcium	330		0.20	0.059			04/29/16 08:31	04/29/16 19:36	
hromium	0.063		0.010	0.0024	_		04/29/16 08:31		
obalt	0.12		0.0050	0.00096	_		04/29/16 08:31		
opper	0.0035	J	0.010	0.0022			04/29/16 08:31		
oppei on	41		0.20		mg/L		04/29/16 08:31		
		1	0.0050	0.0024	-		04/29/16 08:31		
ead	n nnan								
	0.0040				-				
ead agnesium langanese	0.0040 290 2.4		0.10 0.010	0.034 0.0034	mg/L		04/29/16 08:31 04/29/16 08:31	04/29/16 19:36	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40 **Matrix: Water** Date Received: 04/28/16 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	150		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:36	1
Selenium	0.019		0.010	0.0046	mg/L		04/29/16 08:31	05/03/16 17:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:36	1
Sodium	1700		5.0	2.2	mg/L		04/29/16 08:31	05/03/16 03:31	5
Thallium	< 0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:36	1
Vanadium	0.017		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:36	1
Zinc	0.12		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:36	1
- Method: 7470A - Mercury (CVA	AA)								
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:33	1
Method: 7470A - Mercury (CVA	A) - Dissol	vod							
Method: 7470A - Mercury (CVA						_			
Analyte		ved Qualifier	RL 0.00020	MDL 0.00011	Unit mg/L	<u>D</u>	Prepared 05/02/16 13:45	Analyzed 05/04/16 14:35	
Analyte Mercury	Result					<u>D</u>			
Analyte Mercury General Chemistry	<0.00020	Qualifier	0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:35	1
Analyte Mercury General Chemistry Analyte	Result <0.00020 Result		0.00020 RL	0.00011 MDL	mg/L Unit	<u>D</u>		05/04/16 14:35 Analyzed	1
Analyte Mercury General Chemistry Analyte Sulfide	Result <0.00020 Result 7.6	Qualifier	0.00020 RL 1.0	0.00011 MDL 0.22	mg/L Unit mg/L		05/02/16 13:45	05/04/16 14:35 Analyzed 05/03/16 05:30	Dil Fac
Analyte Mercury General Chemistry Analyte Sulfide Sulfate	Result 7.6 1600	Qualifier	0.00020 RL 1.0 500	0.00011 MDL 0.22 200	mg/L Unit mg/L mg/L		05/02/16 13:45	05/04/16 14:35 Analyzed 05/03/16 05:30 05/06/16 09:12	Dil Fac
Analyte Mercury General Chemistry Analyte Sulfide Sulfate Total Organic Carbon - Duplicates	Result 7.6 1600 2200	Qualifier	0.00020 RL 1.0 500 80	0.00011 MDL 0.22 200 18	mg/L mg/L mg/L mg/L		05/02/16 13:45	05/04/16 14:35 Analyzed 05/03/16 05:30 05/06/16 09:12 05/08/16 18:45	Dil Fac 1 100 80
Analyte Mercury General Chemistry Analyte Sulfide Sulfate Total Organic Carbon - Duplicates Nitrogen, Nitrate	Result 7.6 1600 2200	Qualifier	0.00020 RL 1.0 500 80 0.10	0.00011 MDL 0.22 200 18 0.045	mg/L mg/L mg/L mg/L mg/L		05/02/16 13:45	Analyzed 05/03/16 05:30 05/06/16 09:12 05/08/16 18:45 05/03/16 14:20	Dil Fac 1 100 80
Analyte Mercury General Chemistry Analyte Sulfide Sulfide Sulfate Total Organic Carbon - Duplicates Nitrogen, Nitrate	Result 7.6 1600 2200 <0.10 140	Qualifier	0.00020 RL 1.0 500 80	0.00011 MDL 0.22 200 18 0.045 2.9	mg/L mg/L mg/L mg/L mg/L mg/L		05/02/16 13:45 Prepared	05/04/16 14:35 Analyzed 05/03/16 05:30 05/06/16 09:12 05/08/16 18:45	Dil Fac 1 100 80
Analyte Mercury General Chemistry Analyte Sulfide Sulfate Total Organic Carbon - Duplicates Nitrogen, Nitrate Total Suspended Solids	Result 7.6 1600 2200	Qualifier	0.00020 RL 1.0 500 80 0.10	0.00011 MDL 0.22 200 18 0.045 2.9 4.3	mg/L mg/L mg/L mg/L mg/L mg/L mg/L		05/02/16 13:45	Analyzed 05/03/16 05:30 05/06/16 09:12 05/08/16 18:45 05/03/16 14:20	Dil Fac 1 100 80
Analyte Mercury General Chemistry Analyte Sulfide	Result 7.6 1600 2200 <0.10 140 440	Qualifier Qualifier	0.00020 RL 1.0 500 80 0.10 9.1	0.00011 MDL 0.22 200 18 0.045 2.9	mg/L mg/L mg/L mg/L mg/L mg/L mg/L		05/02/16 13:45 Prepared	Analyzed 05/03/16 05:30 05/06/16 09:12 05/08/16 18:45 05/03/16 14:20 05/03/16 11:34	Dil Fac 1 Dil Fac 1 100 80 1 100 1

Lab Sample ID: 500-110872-3

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Method: 8260B - Volatile Organic Compounds (GC/MS) Result Qualifier RL Dil Fac **Analyte** MDL Unit D Prepared Analyzed Acetone 15 5.0 1.7 ug/L 05/11/16 13:17 0.15 ug/L **Benzene** 88 0.50 05/11/16 13:17 1 Bromodichloromethane <1.0 1.0 0.37 ug/L 05/11/16 13:17 1 Bromoform <1.0 1.0 0.48 ug/L 05/11/16 13:17 1 Bromomethane 2.0 05/11/16 13:17 <2.0 0.80 ug/L 1 UJ Carbon disulfide <2.0 2.0 0.45 ug/L 05/11/16 13:17 1 Carbon tetrachloride 1.0 <10 0.38 ug/L 05/11/16 13:17 1 1.0 0.39 ug/L 05/11/16 13:17 Chlorobenzene 6.9 1 1.0 05/11/16 13:17 Chloroethane 0.51 ug/L 1 5.3 Chloroform <1.0 1.0 0.37 ug/L 05/11/16 13:17 1 Chloromethane 1.0 0.32 ug/L 05/11/16 13:17 <1.0 1 cis-1.2-Dichloroethene <1.0 1.0 0.41 ug/L 05/11/16 13:17 1 05/11/16 13:17 cis-1,3-Dichloropropene <1.0 1.0 0.42 ug/L 1 75 1.0 0.49 ug/L 05/11/16 13:17 Cyclohexane 1 Dibromochloromethane <1.0 1.0 0.49 ug/L 05/11/16 13:17 1 1,2-Dibromo-3-Chloropropane <5.0 5.0 2.0 ug/L 05/11/16 13:17 1 1.2-Dibromoethane <1.0 1.0 0.39 ug/L 05/11/16 13:17 1 1.2-Dichlorobenzene <10 1.0 0.33 ug/L 05/11/16 13:17 1 1,3-Dichlorobenzene <1.0 1.0 0.40 ug/L 05/11/16 13:17 1 1.0 1,4-Dichlorobenzene 2.0 0.36 ug/L 05/11/16 13:17 1 Dichlorodifluoromethane < 2 0 20 0.67 ug/L 05/11/16 13:17 1 1,1-Dichloroethane < 1.0 1.0 05/11/16 13:17 0.41 ug/L 1 1.2-Dichloroethane <1.0 1.0 0.39 ug/L 05/11/16 13:17 1 1,1-Dichloroethene <1.0 1.0 0.39 ug/L 05/11/16 13:17 1 1.0 1,2-Dichloropropane < 1.0 0.43 ug/L 05/11/16 13:17 1 Ethylbenzene 100 0.50 0.18 ug/L 05/11/16 13:17 1 <5.0 2-Hexanone 5.0 05/11/16 13:17 1 1.6 ug/L Isopropylbenzene 36 1.0 0.39 ug/L 05/11/16 13:17 1 Methyl acetate <5.0 5.0 2.0 ug/L 05/11/16 13:17 1 Methylcyclohexane 72 1.0 0.32 ug/L 05/11/16 13:17 1 5.0 Methylene Chloride <5.0 1.6 ug/L 05/11/16 13:17 1 5.0 2.1 ug/L 05/11/16 13:17 1 **Methyl Ethyl Ketone** 5.1 methyl isobutyl ketone 5.0 5.0 2.2 ug/L 05/11/16 13:17 1 <1.0 1 Methyl tert-butyl ether 1.0 0.39 ug/L 05/11/16 13:17 Styrene 4.3 1.0 0.39 ug/L 05/11/16 13:17 1 1,1,2,2-Tetrachloroethane <10 1.0 0.40 ug/L 05/11/16 13:17 1 1.0 Tetrachloroethene <1.0 0.37 ug/L 05/11/16 13:17 0.50 0.15 ug/L 05/11/16 13:17 1 Toluene 150 trans-1,2-Dichloroethene <1.0 1.0 0.35 ug/L 05/11/16 13:17 1 trans-1,3-Dichloropropene <1.0 1.0 0.36 ug/L 05/11/16 13:17 1 1,2,4-Trichlorobenzene <1.0 1.0 0.34 ug/L 05/11/16 13:17 1 1,1,1-Trichloroethane <1.0 1.0 0.38 ug/L 05/11/16 13:17 1 0.35 ug/L 1,1,2-Trichloroethane <1.0 1.0 05/11/16 13:17 1 Trichloroethene < 0.50 0.50 0.16 ug/L 05/11/16 13:17 1 Trichlorofluoromethane <1.0 1.0 0.43 ug/L 05/11/16 13:17 1 1,1,2-Trichloro-1,2,2-trifluoroethane <1.0 1.0 0.46 ug/L 05/11/16 13:17 1 0.50 05/11/16 13:17 1 Vinyl chloride 0.70 0.20 ug/L

TestAmerica Job ID: 500-110872-1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-11-GW-04282016

Date Collected: 04/28/16 14:22

Date Received: 04/28/16 16:05

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	88		71 - 120					05/11/16 13:17	
Dibromofluoromethane	85		70 - 120					05/11/16 13:17	
1,2-Dichloroethane-d4 (Surr)	100		71 - 127					05/11/16 13:17	
Toluene-d8 (Surr)	89		75 - 120					05/11/16 13:17	
Method: 8260B - Volatile Org	janic Compo	unds (GC/	MS) - DL						
Analyte Xylenes, Total	Result 620	Qualifier			Unit ug/L	D	Prepared	Analyzed 05/11/16 13:45	Dil Fa
		_		1.1	ug/L				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	94		71 - 120					05/11/16 13:45	
Dibromofluoromethane	88		70 - 120					05/11/16 13:45	
1,2-Dichloroethane-d4 (Surr)	103		71 - 127					05/11/16 13:45	
Toluene-d8 (Surr)	91		75 - 120					05/11/16 13:45	
Method: 8270D - Semivolatile			•	MDI	11-24		Durananad	A I I	D!! E-
Analyte		Qualifier	RL		Unit ug/L	D	Prepared	Analyzed	Dil Fa
Acenaphthene	<8.0		8.0		•		05/03/16 09:31	05/05/16 03:15	1
Acenaphthylene	<8.0		8.0		ug/L		05/03/16 09:31		1
Acetophenone	<40		40		ug/L			05/05/16 03:15	1
Anthracene	<8.0		8.0		ug/L			05/05/16 03:15	1
Benzo[a]anthracene	<1.6		1.6		ug/L			05/05/16 03:15	1
Benzo[a]pyrene	<1.6		1.6	0.80	Ü			05/05/16 03:15	
Benzo[b]fluoranthene	<1.6		1.6		ug/L			05/05/16 03:15	1
Benzo[g,h,i]perylene	<8.0		8.0		ug/L			05/05/16 03:15	1
Benzo[k]fluoranthene	<1.6		1.6		ug/L			05/05/16 03:15	
Bis(2-chloroethoxy)methane		JD	16		ug/L			05/05/16 03:15	1
Bis(2-chloroethyl)ether	<16		16		ug/L			05/05/16 03:15	1
Bis(2-ethylhexyl) phthalate	<80		80		ug/L		05/03/16 09:31	05/05/16 03:15	1
4-Bromophenyl phenyl ether	<40		40		ug/L		05/03/16 09:31	05/05/16 03:15	1
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:15	1
Carbazole	<40		40	2.8	ug/L		05/03/16 09:31	05/05/16 03:15	1
4-Chloroaniline	<80	∮ UJ	80	16	ug/L		05/03/16 09:31	05/05/16 03:15	1
4-Chloro-3-methylphenol	<80		80	19	ug/L		05/03/16 09:31	05/05/16 03:15	1
2-Chloronaphthalene	<16		16	1.9	ug/L		05/03/16 09:31	05/05/16 03:15	1
2-Chlorophenol	<40		40	4.5	ug/L		05/03/16 09:31	05/05/16 03:15	1
4-Chlorophenyl phenyl ether	<40		40	5.1	ug/L		05/03/16 09:31	05/05/16 03:15	1
Chrysene	<4.0		4.0	0.55	ug/L		05/03/16 09:31	05/05/16 03:15	1
Dibenz(a,h)anthracene	<2.4		2.4	0.41	ug/L		05/03/16 09:31	05/05/16 03:15	1
Dibenzofuran	<16		16	2.1	ug/L		05/03/16 09:31	05/05/16 03:15	1
Biberizoraran			40	14	ug/L		05/03/16 09:31	05/05/16 03:15	1
3,3'-Dichlorobenzidine	<40						05/02/46 00:24	05/05/16 02:15	1
	<40 <80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	
3,3'-Dichlorobenzidine					ug/L ug/L		05/03/16 09:31	05/05/16 03:15	
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate	<80 <16	JD	80	2.9	-				1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol	<80 <16	JD	80 16	2.9 14	ug/L		05/03/16 09:31	05/05/16 03:15	1 1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol	<80 <16 16	JD	80 16 80	2.9 14 2.5	ug/L ug/L		05/03/16 09:31 05/03/16 09:31	05/05/16 03:15 05/05/16 03:15	1 1 1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate	<80 <16 16 <16	JD	80 16 80 16	2.9 14 2.5 5.9	ug/L ug/L ug/L ug/L		05/03/16 09:31 05/03/16 09:31 05/03/16 09:31	05/05/16 03:15 05/05/16 03:15 05/05/16 03:15	1 1 1 1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate Di-n-butyl phthalate 4,6-Dinitro-2-methylphenol	<80 <16 16 <16 <40 <160		80 16 80 16 40	2.9 14 2.5 5.9 47	ug/L ug/L ug/L ug/L ug/L		05/03/16 09:31 05/03/16 09:31 05/03/16 09:31 05/03/16 09:31	05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15	1 1 1 1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate Di-n-butyl phthalate 4,6-Dinitro-2-methylphenol 2,4-Dinitrophenol	<80 <16 16 <16 <40 <160		80 16 80 16 40 160	2.9 14 2.5 5.9 47	ug/L ug/L ug/L ug/L ug/L ug/L		05/03/16 09:31 05/03/16 09:31 05/03/16 09:31 05/03/16 09:31 05/03/16 09:31	05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15	1 1 1 1 1
3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate Di-n-butyl phthalate 4,6-Dinitro-2-methylphenol	<80 <16 16 <16 <40 <160		80 16 80 16 40 160	2.9 14 2.5 5.9 47 69 2.0	ug/L ug/L ug/L ug/L ug/L		05/03/16 09:31 05/03/16 09:31 05/03/16 09:31 05/03/16 09:31 05/03/16 09:31	05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15 05/05/16 03:15	1 1 1 1

Lab Sample ID: 500-110872-4

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4 Date Collected: 04/28/16 14:22 **Matrix: Water** Date Received: 04/28/16 16:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.0		8.0	3.7	ug/L		05/03/16 09:31	05/05/16 03:15	10
Fluorene	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobutadiene	<40		40	4.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorocyclopentadiene	<160	UJ	160	51	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:15	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylnaphthalene	2.9	J D	4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylphenol	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
3 & 4 Methylphenol	180	D	16	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
Naphthalene	8.0	D	8.0	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:15	10
3-Nitroaniline	<80		80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitroaniline	<80		80	13	ug/L		05/03/16 09:31	05/05/16 03:15	10
Nitrobenzene	<8.0		8.0	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitrophenol	<80		80	20	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitrophenol	<160	*	160	60	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodiphenylamine	<8.0		8.0	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,2'-oxybis[1-chloropropane]	<16	UJ	16	3.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenanthrene	<8.0		8.0	2.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenol	31	JD	40	5.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pyrene	<8.0		8.0	3.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,5-Trichlorophenol	<80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzaldehyde	<160	† UJ	160	120	ug/L		05/03/16 09:31	05/05/16 03:15	10
Caprolactam	<80	ŧ	80	12	ug/L		05/03/16 09:31	05/05/16 03:15	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
1,1'-Biphenyl	19	J D	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	84		30 - 123				05/03/16 09:31	05/05/16 03:15	10
2-Fluorophenol (Surr)	56		30 - 110				05/03/16 09:31		10
Nitrobenzene-d5 (Surr)	72		33 - 139					05/05/16 03:15	10
Phenol-d5 (Surr)	45		20 - 100				05/03/16 09:31	05/05/16 03:15	10
Terphenyl-d14 (Surr)	88		42 - 150				05/03/16 09:31	05/05/16 03:15	10
2,4,6-Tribromophenol (Surr)	127		30 - 150				05/03/16 09:31	05/05/16 03:15	10

Method: 8081B - Organocl	hlorine Pesticides (GC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040	0.040	0.0053	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-BHC	<0.040	0.040	0.0026	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-Chlordane	<0.040	0.040	0.0044	ug/L		04/29/16 10:36	05/03/16 13:40	1
beta-BHC	<0.040	0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDD	<0.040	0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDE	<0.040	0.040	0.0038	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDT	<0.040	0.040	0.0032	ug/L		04/29/16 10:36	05/03/16 13:40	1
delta-BHC	<0.040	0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 14:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 8081B - Organoci Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Dieldrin	<0.040		0.040		ug/L		04/29/16 10:36	05/03/16 13:40	
Endosulfan I	<0.040		0.040	0.0041			04/29/16 10:36		
Endosulfan II	<0.040		0.040	0.0028	_			05/03/16 13:40	
Endosulfan sulfate	<0.040		0.040	0.012	•			05/03/16 13:40	
Endrin	<0.040		0.040	0.012				05/03/16 13:40	
	<0.040		0.040	0.0082	•			05/03/16 13:40	
Endrin aldehyde			0.040		•				
Endrin ketone	<0.040			0.017				05/03/16 13:40	
gamma-BHC (Lindane)	<0.040		0.040	0.0056	•			05/03/16 13:40	
gamma-Chlordane	<0.040		0.040	0.0072	Ü			05/03/16 13:40	
Heptachlor	<0.040		0.040	0.013				05/03/16 13:40	
Heptachlor epoxide	<0.040		0.040	0.014	•			05/03/16 13:40	
Methoxychlor	<0.080		0.080	0.023	•			05/03/16 13:40	
Toxaphene	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 13:40	
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	28	X	30 - 143				04/29/16 10:36	05/03/16 13:40	
Tetrachloro-m-xylene	54		30 - 120				04/29/16 10:36	05/03/16 13:40	
Mathadi 9002A Balisahla	ringted Dinbon.	de (DCDe)	by Coo Ch						
Method: 8082A - Polychloi Analyte		VIS (PCBS) Qualifier	by Gas Chi RL	omatogr MDL		D	Prepared	Analyzed	Dil Fa
PCB-1016	<0.40		0.40	0.067		=	04/29/16 10:36	05/03/16 20:27	
PCB-1221	<0.40		0.40	0.20	•		04/29/16 10:36	05/03/16 20:27	
PCB-1232	<0.40		0.40	0.20	0			05/03/16 20:27	
PCB-1242	<0.40		0.40	0.20	•			05/03/16 20:27	
PCB-1248	<0.40		0.40	0.20	_			05/03/16 20:27	
	~U. 4 U		0.40	0.20	ug/L		04/29/10 10.30	03/03/10 20.27	
	<0.40		0.40	0.20	110/		04/20/16 10:26	05/02/16 20:27	
PCB-1254	<0.40		0.40		ug/L			05/03/16 20:27	
PCB-1254	<0.40 <0.40		0.40	0.20 0.070			04/29/16 10:36 04/29/16 10:36		
PCB-1254 PCB-1260 Surrogate	<0.40 %Recovery	Qualifier	0.40				04/29/16 10:36 Prepared	05/03/16 20:27 Analyzed	Dil Fa
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene	<0.40 **Recovery 110	Qualifier	0.40 Limits 30 - 127				04/29/16 10:36 Prepared 04/29/16 10:36	05/03/16 20:27 Analyzed 05/03/16 20:27	Dil Fa
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl	<0.40 **Recovery 110 66	Qualifier	0.40				04/29/16 10:36 Prepared 04/29/16 10:36	05/03/16 20:27 Analyzed	Dil Fa
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (IC	<0.40 **Recovery 110 66 CP)	Qualifier Qualifier	0.40 Limits 30 - 127		ug/L	D	04/29/16 10:36 Prepared 04/29/16 10:36	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27	Dil Fa
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICA)	<0.40 **Recovery 110 66 CP) Result	Qualifier	0.40 Limits 30 - 127 30 - 150	0.070	ug/L Unit	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum	<0.40 **Recovery 110 66 CP) Result 0.12	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20	0.070 MDL 0.062	ug/L Unit mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020	MDL 0.062 0.0064	Unit mg/L mg/L	D	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020 <0.010	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010	MDL 0.062 0.0064 0.0031	Unit mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.010	MDL 0.062 0.0064 0.0031 0.0022	Unit mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.010 0.0040	MDL 0.062 0.0064 0.0031 0.0022 0.00085	Unit mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.010 0.0040 0.0020	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094	Unit mg/L mg/L mg/L mg/L mg/L mg/L	D	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130	Qualifier	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.010 0.0040 0.0020 0.20	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083	Qualifier J **	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.20 0.010	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Chromium Cobalt	<0.40 **Recovery 110	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.010 0.0050	0.070 MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Chromium Cobalt Copper	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Chromium Cobalt Copper	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053 35	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Chromium Cobalt Copper	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053 35 0.0073	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20 0.010 0.0050 0.010	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.110 0.0024	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 05/03/16 18:06	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICAnalyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Chromium Cobalt Copper	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053 35	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20 0.0050 0.10	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10 0.0024 0.0034	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICA) Analyte Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium	<0.40 %Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053 35 0.0073	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20 0.010 0.0050 0.010	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.110 0.0024	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	D	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 05/03/16 18:06	
PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl	<0.40 **Recovery 110 66 CP) Result 0.12 <0.020 <0.010 1.1 <0.0040 <0.0020 130 0.0083 0.0021 0.0053 35 0.0073 120	Qualifier J 🛩	0.40 Limits 30 - 127 30 - 150 RL 0.20 0.020 0.010 0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20 0.0050 0.10	MDL 0.062 0.0064 0.0031 0.0022 0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10 0.0024 0.0034	Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	04/29/16 10:36 Prepared 04/29/16 10:36 04/29/16 10:36 Prepared 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	05/03/16 20:27 Analyzed 05/03/16 20:27 05/03/16 20:27 Analyzed 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43 04/29/16 19:43	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 14:22 Matrix: Water Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) (0 Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Selenium	0.0054		0.010		mg/L		04/29/16 08:31		
Silver	<0.0050		0.0050	0.0013	-		04/29/16 08:31		
Sodium	360		1.0		mg/L			04/29/16 19:43	
Thallium	<0.010		0.010	0.0028	-			04/29/16 19:43	
Vanadium	0.0053		0.0050	0.0019	-			04/29/16 19:43	
Zinc	0.014	J	0.020	0.0090				04/29/16 19:43	
Method: 6010C - Metals (ICP) -	Dissolved								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20	<u> </u>	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:48	
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:48	
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:48	
Barium	1.2		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:48	
Beryllium	< 0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:48	
Cadmium	<0.0020		0.0020	0.00094	•		04/29/16 08:31	04/29/16 19:48	
Calcium	140		0.20	0.059	-		04/29/16 08:31		
Chromium	0.0083	J	0.010	0.0024	-		04/29/16 08:31	04/29/16 19:48	
Cobalt	0.0021		0.0050	0.00096	•		04/29/16 08:31	04/29/16 19:48	
Copper	0.0039	. j	0.010	0.0022			04/29/16 08:31	04/29/16 19:48	
ron	36		0.20		mg/L		04/29/16 08:31		
Lead	0.0044	J	0.0050	0.0024	Ū		04/29/16 08:31		
Magnesium	120		0.10	0.034	•			04/29/16 19:48	
Manganese	0.28		0.010	0.0034	•		04/29/16 08:31		
Nickel	0.019		0.010	0.0031	•		04/29/16 08:31		
Potassium	150		0.50		mg/L		04/29/16 08:31		
Selenium	<0.010	1	0.010	0.0046	-		04/29/16 08:31		
Silver	<0.0050		0.0050	0.0013	•		04/29/16 08:31		
Sodium	380		1.0		mg/L			04/29/16 19:48	
Thallium	<0.010		0.010	0.0028	-			04/29/16 19:48	
	0.0056		0.010	0.0028	-			04/29/16 19:48	
Vanadium Zino	<0.020		0.0030	0.0019				04/29/16 19:48	
Zinc	<0.020		0.020	0.0090	IIIg/L		04/29/10 00.31	04/29/10 19.46	
Method: 7470A - Mercury (CVA Analyte	•	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020	Quanner	0.00020	0.00011			05/02/16 13:45		ווום
viei cui y	<0.00020		0.00020	0.00011	IIIg/L		05/02/10 13.45	05/04/10 14.57	
Method: 7470A - Mercury (CVA	,								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:40	
General Chemistry	_			_			_	_	
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
Sulfide	<1.0		1.0		mg/L			05/03/16 05:33	
Sulfate	6.5		5.0		mg/L			05/06/16 09:15	
Total Organic Carbon - Duplicates	91		4.0		mg/L			05/08/16 19:05	
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	
Total Suspended Solids	85		9.1	2.9	mg/L			05/03/16 11:36	
Ammonia	67	ø	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:20	:
Nitrogen, Nitrite < 0.0		. *	0.020	0.0032	mg/L			04/29/16 14:53	
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:27	

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110872-5

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00 Date Received: 04/28/16 16:05 Matrix: Water

TestAmerica Job ID: 500-110872-1

Method: 8260B - Volatile Org Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	<50		50	17	ug/L			05/11/16 14:12	1
Benzene	450	D	5.0		ug/L			05/11/16 14:12	1
Bromodichloromethane	<10	В	10		ug/L			05/11/16 14:12	1
Bromoform	<10		10		ug/L			05/11/16 14:12	
Bromomethane	<20	UJ	20		ug/L			05/11/16 14:12	1
Carbon disulfide	<20	UJ	20		ug/L			05/11/16 14:12	1
Carbon tetrachloride	<10		10		ug/L			05/11/16 14:12	
Chlorobenzene	<10		10		ug/L			05/11/16 14:12	1
Chloroethane	<10		10		ug/L ug/L			05/11/16 14:12	1
Chloroform	<10		10		ug/L ug/L			05/11/16 14:12	
					_				
Chloromethane	<10		10		ug/L			05/11/16 14:12	1
cis-1,2-Dichloroethene	26	JD	10		ug/L			05/11/16 14:12	
cis-1,3-Dichloropropene	<10		10		ug/L			05/11/16 14:12	1
Cyclohexane	<10		10		ug/L			05/11/16 14:12	1
Dibromochloromethane	<10		10		ug/L			05/11/16 14:12	
1,2-Dibromo-3-Chloropropane	<50		50		ug/L			05/11/16 14:12	1
1,2-Dibromoethane	<10		10		ug/L			05/11/16 14:12	1
1,2-Dichlorobenzene	14	D	10		ug/L			05/11/16 14:12	1
1,3-Dichlorobenzene	<10		10		ug/L			05/11/16 14:12	1
1,4-Dichlorobenzene	<10		10		ug/L			05/11/16 14:12	1
Dichlorodifluoromethane	<20		20		ug/L			05/11/16 14:12	1
1,1-Dichloroethane	23	JD	10		ug/L			05/11/16 14:12	1
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 14:12	1
1,1-Dichloroethene	<10		10	3.9	ug/L			05/11/16 14:12	1
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 14:12	1
Ethylbenzene	1900	D	5.0	1.8	ug/L			05/11/16 14:12	1
2-Hexanone	<50		50	16	ug/L			05/11/16 14:12	1
Isopropylbenzene	110	D	10	3.9	ug/L			05/11/16 14:12	1
Methyl acetate	<50		50	20	ug/L			05/11/16 14:12	1
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 14:12	1
Methylene Chloride	<50		50	16	ug/L			05/11/16 14:12	1
Methyl Ethyl Ketone	<50		50		ug/L			05/11/16 14:12	1
methyl isobutyl ketone	<50		50		ug/L			05/11/16 14:12	1
Methyl tert-butyl ether	<10		10		ug/L			05/11/16 14:12	1
Styrene	120	JD	10		ug/L			05/11/16 14:12	1
1,1,2,2-Tetrachloroethane	<10	3D	10		ug/L			05/11/16 14:12	1
Tetrachloroethene	<10		10		ug/L			05/11/16 14:12	· · · · · · · · · · · · · · · · · · ·
trans-1,2-Dichloroethene	<10		10		ug/L			05/11/16 14:12	1
trans-1,3-Dichloropropene	<10		10		ug/L			05/11/16 14:12	1
1,2,4-Trichlorobenzene	<10		10		ug/L			05/11/16 14:12	' 1
1,1,1-Trichloroethane	<10		10		ug/L ug/L			05/11/16 14:12	1
1,1,2-Trichloroethane	<10		10		ug/L ug/L			05/11/16 14:12	1
Trichloroethene					ug/L ug/L			05/11/16 14:12	
Trichloroethene Trichlorofluoromethane	<5.0 <10		5.0		-				
			10		ug/L			05/11/16 14:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10		ug/L			05/11/16 14:12	
Vinyl chloride	7.1	D	5.0	2.0	ug/L			05/11/16 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-1(04282016)

Lab Sample ID: 500-110872-5 Date Collected: 04/28/16 00:00 **Matrix: Water**

2,6-Dinitrotoluene

Method: 8260B - Volatile O	rganic Compo	unds (GC/	MS) (Continu	ed)					
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Dibromofluoromethane	86		70 - 120					05/11/16 14:12	1
1,2-Dichloroethane-d4 (Surr)	99		71 - 127					05/11/16 14:12	1
Toluene-d8 (Surr)	90		75 - 120					05/11/16 14:12	1
Method: 8260B - Volatile O	rganic Compo	unds (GC/	MS) - DL						
Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Toluene	4600	JD	50	15	ug/L			05/11/16 14:40	10
Xylenes, Total	14000	D	100	22	ug/L			05/11/16 14:40	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	91		71 - 120					05/11/16 14:40	10
Dibromofluoromethane	90		70 - 120					05/11/16 14:40	10
1,2-Dichloroethane-d4 (Surr)	100		71 - 127					05/11/16 14:40	10
Toluene-d8 (Surr)	94		75 - 120					05/11/16 14:40	10
Method: 8270D - Semivola	tile Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Acenaphthene	<8.1		8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	1
Acenaphthylene	5.1	JD	8.1		J		05/03/16 09:31	05/05/16 03:42	1
Acetophenone	<40		40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	1
Anthracene	<8.1		8.1	2.7	ug/L		05/03/16 09:31	05/05/16 03:42	1
Benzo[a]anthracene	<1.6		1.6	0.46	ug/L		05/03/16 09:31	05/05/16 03:42	1
Benzo[a]pyrene	<1.6		1.6	0.80	ug/L		05/03/16 09:31	05/05/16 03:42	1
Benzo[b]fluoranthene	<1.6		1.6	0.65	ug/L		05/03/16 09:31	05/05/16 03:42	1
Benzo[g,h,i]perylene	<8.1		8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	1
Benzo[k]fluoranthene	<1.6		1.6	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	1
Bis(2-chloroethoxy)methane	<16		16	2.3	ug/L		05/03/16 09:31	05/05/16 03:42	1
Bis(2-chloroethyl)ether	<16		16	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	1
Bis(2-ethylhexyl) phthalate	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	1
4-Bromophenyl phenyl ether	<40		40	4.4	ug/L		05/03/16 09:31	05/05/16 03:42	1
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:42	1
Carbazole	<40		40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	1
4-Chloroaniline	<81	VUJ	81		ug/L		05/03/16 09:31	05/05/16 03:42	1
4-Chloro-3-methylphenol	<81		81		ug/L		05/03/16 09:31	05/05/16 03:42	1
2-Chloronaphthalene	<16		16		ug/L			05/05/16 03:42	1
2-Chlorophenol	<40		40		ug/L		05/03/16 09:31		1
4-Chlorophenyl phenyl ether	<40		40		ug/L			05/05/16 03:42	1
Chrysene	<4.0		4.0		ug/L			05/05/16 03:42	1
Dibenz(a,h)anthracene	<2.4		2.4		ug/L			05/05/16 03:42	<u>.</u> 1
Dibenzofuran	<16		16		ug/L			05/05/16 03:42	1
3,3'-Dichlorobenzidine	<40		40		ug/L			05/05/16 03:42	1
2,4-Dichlorophenol	<81		81		ug/L			05/05/16 03:42	
·	31	D	16		ug/L			05/05/16 03:42	1
Diethyl phthalate			81		ug/L ug/L			05/05/16 03:42	1
2,4-Dimethylphenol		JD						05/05/16 03:42	 1
Dimethyl phthalate	<16		16		ug/L				
Di-n-butyl phthalate	<40		40		ug/L			05/05/16 03:42	1
4,6-Dinitro-2-methylphenol	<160		160		ug/L			05/05/16 03:42	
2,4-Dinitrophenol	<160		160		ug/L			05/05/16 03:42	1
2,4-Dinitrotoluene	<8.1		8.1		ug/L			05/05/16 03:42	1
2.6 Dinitratalyana	-10		4.0	0.50	/1		05/02/46 00:24	0E/0E/46 02:42	4

10

05/03/16 09:31 05/05/16 03:42

4.0

0.59 ug/L

<4.0

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-1(04282016) Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00 Matrix: Water Date Received: 04/28/16 16:05

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Di-n-octyl phthalate	<81	y	81		ug/L		05/03/16 09:31	05/05/16 03:42	1
Fluoranthene	<8.1		8.1	3.7	ug/L		05/03/16 09:31	05/05/16 03:42	1
Fluorene	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/05/16 03:42	1
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:42	1
Hexachlorobutadiene	<40		40	4.2	ug/L		05/03/16 09:31	05/05/16 03:42	1
Hexachlorocyclopentadiene	<160	UJ	160	51	ug/L		05/03/16 09:31	05/05/16 03:42	1
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:42	1
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:42	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylnaphthalene	20	D	4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylphenol	14	JD	16	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
3 & 4 Methylphenol	280	D	16	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
Naphthalene	260	D	8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:42	10
3-Nitroaniline	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitroaniline	<81		81	13	ug/L		05/03/16 09:31	05/05/16 03:42	10
Nitrobenzene	<8.1		8.1	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitrophenol	<81		81	20	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitrophenol	<160	×	160	60	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodiphenylamine	15	D	8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,2'-oxybis[1-chloropropane]	<16	UJ	16	3.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenanthrene	<8.1		8.1	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenol	84	JD	40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pyrene	<8.1		8.1	3.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,5-Trichlorophenol	<81		81	21	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzaldehyde	<160	† UJ	160	120	ug/L		05/03/16 09:31	05/05/16 03:42	10
Caprolactam	<81	1 33	81	12	ug/L		05/03/16 09:31	05/05/16 03:42	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
1,1'-Biphenyl	3.2	JD	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	83		30 - 123				05/03/16 09:31		1
2-Fluorophenol (Surr)	58		30 - 110				05/03/16 09:31	05/05/16 03:42	1
Nitrobenzene-d5 (Surr)	72		33 - 139				05/03/16 09:31	05/05/16 03:42	1
Phenol-d5 (Surr)	52		20 - 100				05/03/16 09:31	05/05/16 03:42	1
Terphenyl-d14 (Surr)	102		42 - 150				05/03/16 09:31	05/05/16 03:42	1
2,4,6-Tribromophenol (Surr)	139		30 - 150				05/03/16 09:31	05/05/16 03:42	10

Method: 8081B - Organo	chlorine Pesticides (GC)							
Analyte	Result Qualifier	RL	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.20 UJ	0.20	0.027 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
alpha-BHC	<0.20	0.20	0.013 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
alpha-Chlordane	<0.20	0.20	0.022 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
beta-BHC	<0.20	0.20	0.051 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDD	<0.20	0.20	0.067 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDE	<0.20	0.20	0.019 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDT	<0.20	0.20	0.016 u	ıg/L		04/29/16 10:36	05/03/16 13:59	5

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-1(04282016) Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00 Matrix: Water Date Received: 04/28/16 16:05

Method: 8081B - Organochio Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
delta-BHC	<0.20		0.20	0.052				05/03/16 13:59	Dii Fa
Dieldrin	<0.20	UJ	0.20	0.052	-			05/03/16 13:59	
Endosulfan I	<0.20		0.20					05/03/16 13:59	
Endosulfan II	<0.20		0.20	0.021				05/03/16 13:59	
Endosulfan sulfate	<0.20		0.20		•			05/03/16 13:59	
				0.059					
Endrin	<0.20 <0.20		0.20 0.20		ug/L			05/03/16 13:59	
Endrin aldehyde					•			05/03/16 13:59	
Endrin ketone	<0.20		0.20	0.086	-			05/03/16 13:59	
gamma-BHC (Lindane)	<0.20		0.20	0.028	-			05/03/16 13:59	
gamma-Chlordane	<0.20		0.20	0.036	-			05/03/16 13:59	
Heptachlor	<0.20		0.20	0.068	-			05/03/16 13:59	
Heptachlor epoxide	<0.20		0.20	0.069	-			05/03/16 13:59	
Methoxychlor	<0.40	/	0.40		ug/L			05/03/16 13:59	
Toxaphene	<2.0	У	2.0	1.0	ug/L		04/29/16 10:36	05/03/16 13:59	
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	11	X	30 - 143				04/29/16 10:36	05/03/16 13:59	
Tetrachloro-m-xylene	414	X	30 - 120				04/29/16 10:36	05/03/16 13:59	
Method: 8082A - Polychlorina	ated Binheny	/ls (PCBs)	hy Gas Chr	omatogr	anhv				
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
PCB-1016	<2.0		2.0	0.34	ug/L	— –	04/29/16 10:36	05/04/16 11:00	
PCB-1221	<2.0		2.0		ug/L		04/29/16 10:36	05/04/16 11:00	
PCB-1232	<2.0		2.0		ug/L		04/29/16 10:36	05/04/16 11:00	
PCB-1242	<2.0		2.0		ug/L			05/04/16 11:00	
PCB-1248	<2.0		2.0		ug/L			05/04/16 11:00	
PCB-1254	<2.0		2.0		ug/L			05/04/16 11:00	
PCB-1260	<2.0		2.0		ug/L			05/04/16 11:00	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	89		30 - 127				04/29/16 10:36	05/04/16 11:00	
DCB Decachlorobiphenyl	48		30 - 150					05/04/16 11:00	
Method: 6010C - Metals (ICP)									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	0.066	J 1	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:53	
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:53	
	0.0075	J	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:53	
Arsenic	0.0075						04/29/16 08:31	04/29/16 19:53	
	0.0075		0.010	0.0022	mg/L				
Barium			0.010 0.0040	0.0022 0.00085	_			04/29/16 19:53	
Barium Beryllium	0.25	. <u>Y </u>		0.00085	mg/L		04/29/16 08:31	04/29/16 19:53 04/29/16 19:53	
Barium Beryllium Cadmium	0.25 <0.0040 <0.0020		0.0040 0.0020	0.00085 0.00094	mg/L mg/L		04/29/16 08:31 04/29/16 08:31		
Barium Beryllium Cadmium Calcium	0.25 <0.0040 <0.0020 120		0.0040 0.0020 0.20	0.00085 0.00094 0.059	mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53	
Barium Beryllium Cadmium Calcium Chromium	0.25 <0.0040 <0.0020 120 0.0045	J	0.0040 0.0020 0.20 0.010	0.00085 0.00094 0.059 0.0024	mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53	
Barium Beryllium Cadmium Calcium Chromium Cobalt	0.25 <0.0040 <0.0020 120 0.0045 0.0026	J J	0.0040 0.0020 0.20 0.010 0.0050	0.00085 0.00094 0.059 0.0024 0.00096	mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53	
Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper	0.25 <0.0040 <0.0020 120 0.0045 0.0026	J J	0.0040 0.0020 0.20 0.010 0.0050 0.010	0.00085 0.00094 0.059 0.0024 0.00096 0.0022	mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53	
Barium Beryllium Cadmium Calcium Chromium Cobalt Copper	0.25 <0.0040 <0.0020 120 0.0045 0.0026 7.3	J J	0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20	0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10	mg/L mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53	
Barium Beryllium Cadmium Calcium Chromium Cobalt Copper	0.25 <0.0040 <0.0020 120 0.0045 0.0026 0.0025 7.3 0.0029	J J	0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20 0.0050	0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10 0.0024	mg/L mg/L mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 05/03/16 18:16	
Barium Beryllium Cadmium Calcium Chromium Cobalt Copper	0.25 <0.0040 <0.0020 120 0.0045 0.0026 7.3	J J	0.0040 0.0020 0.20 0.010 0.0050 0.010 0.20	0.00085 0.00094 0.059 0.0024 0.00096 0.0022 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L		04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31 04/29/16 08:31	04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53 04/29/16 19:53	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-1(04282016)

Lab Sample ID: 500-110872-5 Date Collected: 04/28/16 00:00 **Matrix: Water**

Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) (C Analyte		<i>)</i> Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Potassium	68	Quanner	0.50		mg/L	=	04/29/16 08:31	04/29/16 19:53	Dilla
Selenium	0.0059		0.010	0.0046	-			04/29/16 19:53	
Silver	< 0.0059	37	0.0050	0.0040	_			04/29/16 19:53	
Sodium			1.0		mg/L			04/29/16 19:53	
Thallium	240 < 0.010		0.010	0.0028	-				
					-			04/29/16 19:53 04/29/16 19:53	
Vanadium	0.0039		0.0050	0.0019	•				
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:53	
Method: 6010C - Metals (ICP) - D		Qualifier	DI	MDI	11		Duamanad	A made mad	D:: F-
Analyte	<0.20		RL	MDL		D	Prepared	Analyzed 04/29/16 19:58	Dil Fa
Aluminum			0.20	0.062	•		04/29/16 08:31		
Antimony	<0.020		0.020	0.0064	•		04/29/16 08:31		
Arsenic	0.0085	. J	0.010	0.0031	•		04/29/16 08:31		
Barium	0.25		0.010	0.0022	-		04/29/16 08:31		
Beryllium	<0.0040		0.0040	0.00085	•		04/29/16 08:31		
Cadmium	<0.0020		0.0020	0.00094	•		04/29/16 08:31		
Calcium	110		0.20	0.059	-		04/29/16 08:31		
Chromium	0.0045	J	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:58	
Cobalt	0.0025	J	0.0050	0.00096	Ū		04/29/16 08:31	04/29/16 19:58	
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:58	
Iron	7.5		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:58	
Lead	< 0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:22	
Magnesium	46		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:58	
Manganese	0.37		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:58	
Nickel	0.011		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:58	
Potassium	71		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:58	
Selenium	0.0077	J 🖍	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:58	
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:58	
Sodium	240		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:58	
Thallium	<0.010		0.010	0.0028	-		04/29/16 08:31	04/29/16 19:58	
Vanadium	0.0036	J	0.0050	0.0019	_			04/29/16 19:58	
Zinc	<0.020		0.020	0.0090				04/29/16 19:58	
Method: 7470A - Mercury (CVAA	N.								
Analyte	,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:42	
Method: 7470A - Mercury (CVAA	A) - Disso	lved							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:44	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Sulfide	1.7		1.0	0.22	mg/L			05/03/16 05:35	
Sulfate	150		50		mg/L			05/06/16 09:16	1
Total Organic Carbon - Duplicates	56		2.0		mg/L			05/10/16 00:36	
Nitrogen, Nitrate	<0.10		0.10	0.045	-			05/03/16 14:20	
Total Suspended Solids	26		5.0		mg/L			05/03/16 11:37	
Ammonia		J	5.0		mg/L		05/09/16 19:05	05/09/16 22:23	2
-minoria	54,		5.0	1.1	my/∟		00/00/10 18.00	00/00/10 22.23	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110872-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-1(04282016) Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00

Date Received: 04/28/16 16:05

General Chemistry (Continued)

AnalyteResult Nitrogen, Nitrate NitriteQualifierRL 0.10MDL 0.10Unit mg/LD means of mg/LPrepared 0.10Analyzed 0.11 Fac 0.045

Matrix: Water

9	ARCADIS	
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ID#:	

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page _	_ of
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Lab Work Order # 500—110946

9	1	ompany Name:		Telephone	_ 575	37	172		Preservative	E	E	C	<u>c</u>	1	A		Preservation Key	Keys Contain	er Information Key:
Send Results to:	Address:	20 S. La. Salle	e 54:	Fax:	- 1	- /			# of Container	s 6	_	1	1	1		9	A. H ₂ SO ₄ B. HCL C. HNO ₄	2. 1 L A 3. 250 n	mber
Res	Suite	1350 Chicago,	IL						Container Information								D. NaOH E. None	4. 500 n 5. Enco	nl Plastic re
Send	City	State	Z.p	E-mail Add						PAI	RAMET	ER ANA	LYSIS 8	& METH		,	F. Other:	6. 2 oz. 7. 4 oz.	
	}			ellyn.	gates @c	ircadi	5 .Con	^		· /	/	530 /	S%2/	(b)	42/	5/	G. Other:	8. 8 oz.9. Other	
	ect Name/Loca C-CS	(Chicago, IL))	Project #:	001805	0002	.,000	05	No.	1	/2	1 / Te	2 3 W	1 5-/M	1 × 15			10. Other	;
Sam	pler's Printed	Name: holes Icks	•	Sampler's	Signature:					~ /%	W K		7 5 S	30		20/	Matrix Key: SO - Soil W - Water	SE - Sediment SL - Sludge	NL - NAPL/Oil SW - Sample Wipe
		Sample ID		Co	llection	Тур	e (√)	Matrix	6220 Cist 6	~	では、	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		24 4 64.	3 4 5	27. Lehous	T - Tissue	A - Air	Other:
_	,			Date	Time	Comp	Grab	,	1	/	W3	187	1 K	/h 5	100 19		REMARKS		
_/	Mw-Z	-GW-0428	2016	4-28-1	6 617		V	W	X	X	_X			X	X				
1	MW-11	9-GW-0429;	2016	4-29-1	60707		V	W	X	X	X	X	X	X	X				
N	1W-6	-GW-0429	2016		0947		V	W	×	X	Χ	X	×	X	X				
M	1W-7	GW-0429-	2016		1047		V	W	×	X	X	X	X	X	X				
M	W-9	-GW-0429:	2016	-	1227		V	W	×	X	X	X	X	У	X				
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																	500-1	110948 COC	
		tions/Comments: QE													Local 1	Method	dj'		evel IV
5	M450	DO_NOZ_F	3- Vitre	gen	, Witer	e; 9 E	738 - S	ulfate	; 254	DD-T	otal s	uspen	ded 5	ollds	Б	elinguished	Bu I	Laboratory R	kage
Lab N	Name:			Cooler (Custody Sea	ıl (√)	<u> </u>	Printed	Name:	uished By		Printed Name:	. <	ĺ	Printed Name:		f Printe	ed Name:	
Fe	25+A	murica Chi	icolgo						cholas	Icks		David	X Bo	okner	.Das	101B	edner /	trick San	che2
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Speci	ify Turnaround	Requirements:		Sample	Receipt:			Firm:	rcadi	5		Firm/Courier:	A		Firm Courier:	TA	Firm:	TA-Chi	also
Shipp	ping Tracking #	t:		Conditio	on/Cooler Te	mp: 3. 3	34	A. Date/Ti	me: 29-16		17	Date/Time:	طا-	1617	Date/Tighe:	/16 1	17:05 Date/	Time: 4/29/14	17:05

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1 Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1 Date Collected: 04/28/16 16:17

Matrix: Water

Date Received: 04/30/16 07:34	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 05:28	1
Benzene	14		0.50	0.15	ug/L			05/12/16 05:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 05:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 05:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 05:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 05:28	1
Chloroethane	4.8		1.0	0.51	ug/L			05/12/16 05:28	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Chloromethane	<1.0	UJ	1.0	0.32	ug/L			05/12/16 05:28	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 05:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 05:28	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 05:28	1
Dibromochloromethane	<1.0	UJ	1.0	0.49	ug/L			05/12/16 05:28	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0		ug/L			05/12/16 05:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,2-Dichlorobenzene	24		1.0		ug/L			05/12/16 05:28	1
1,3-Dichlorobenzene	5.6		1.0		ug/L			05/12/16 05:28	1
1,4-Dichlorobenzene	23		1.0		ug/L			05/12/16 05:28	
Dichlorodifluoromethane	<2.0	UJ	2.0		ug/L			05/12/16 05:28	
1,1-Dichloroethane	<1.0	00	1.0		ug/L			05/12/16 05:28	1
1,2-Dichloroethane	<1.0		1.0		ug/L			05/12/16 05:28	1
1,1-Dichloroethene	<1.0		1.0		ug/L			05/12/16 05:28	1
1,2-Dichloropropane	<1.0		1.0		ug/L			05/12/16 05:28	1
Ethylbenzene	2.2		0.50		ug/L			05/12/16 05:28	
2-Hexanone	<5.0	UJ	5.0		ug/L			05/12/16 05:28	,
Isopropylbenzene	5.3	00	1.0		ug/L			05/12/16 05:28	,
Methyl acetate	20		5.0		ug/L			05/12/16 05:28	
Methylcyclohexane	<1.0		1.0		ug/L			05/12/16 05:28	1
Methylene Chloride	<5.0		5.0		ug/L			05/12/16 05:28	1
Methyl Ethyl Ketone	<5.0	UJ	5.0		ug/L			05/12/16 05:28	1
methyl isobutyl ketone	<5.0	UJ	5.0		ug/L			05/12/16 05:28	1
Methyl tert-butyl ether	<1.0	00	1.0		ug/L			05/12/16 05:28	,
Styrene	<1.0		1.0		ug/L			05/12/16 05:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0		ug/L			05/12/16 05:28	1
Tetrachloroethene	<1.0		1.0		ug/L			05/12/16 05:28	1
Toluene	1.3		0.50		ug/L			05/12/16 05:28	1
trans-1,2-Dichloroethene	<1.0		1.0		ug/L			05/12/16 05:28	1
trans-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 05:28	1
1,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/12/16 05:28	
1,1,1-Trichloroethane	<1.0		1.0		ug/L			05/12/16 05:28	1
1,1,2-Trichloroethane	<1.0		1.0		ug/L			05/12/16 05:28	1
Trichloroethene	<0.50		0.50		ug/L			05/12/16 05:28	1
Trichlorofluoromethane	<1.0		1.0		ug/L			05/12/16 05:28	,
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0		ug/L			05/12/16 05:28	1
Vinyl chloride	<0.50		0.50		ug/L			05/12/16 05:28	· · · · · · · · · · · · · · · · · · ·
Xylenes, Total	6.2		1.0		ug/L			05/12/16 05:28	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

 Date Collected: 04/28/16 16:17
 Matrix: Water

 Date Received: 04/30/16 07:34
 Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	97		71 - 120					05/12/16 05:28	
Dibromofluoromethane	99		70 - 120					05/12/16 05:28	
1,2-Dichloroethane-d4 (Surr)	99		71 - 127					05/12/16 05:28	
Toluene-d8 (Surr)	99		75 - 120					05/12/16 05:28	
Method: 8260B - Volatile O	rganic Compo	unds (GC/	MS) - DI						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chlorobenzene	660	D	5.0	1.9	ug/L			05/12/16 05:55	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	97		71 - 120					05/12/16 05:55	
Dibromofluoromethane	99		70 - 120					05/12/16 05:55	
1,2-Dichloroethane-d4 (Surr)	99		71 - 127					05/12/16 05:55	
Toluene-d8 (Surr)	98		75 - 120					05/12/16 05:55	
Method: 8270D - Semivolat	ile Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Acenaphthene	1.1		0.83	0.26	ug/L		05/05/16 08:14	05/13/16 09:00	
Acenaphthylene	<0.83		0.83	0.22	ug/L		05/05/16 08:14	05/13/16 09:00	
Acetophenone	<4.1		4.1	0.55	ug/L		05/05/16 08:14	05/13/16 09:00	
Anthracene	<0.83		0.83	0.28	ug/L		05/05/16 08:14	05/13/16 09:00	
Benzo[a]anthracene	<0.17		0.17	0.047	ug/L		05/05/16 08:14	05/13/16 09:00	
Benzo[a]pyrene	<0.17		0.17	0.082	ug/L		05/05/16 08:14	05/13/16 09:00	
Benzo[b]fluoranthene	<0.17		0.17	0.067	ug/L		05/05/16 08:14	05/13/16 09:00	
Benzo[g,h,i]perylene	<0.83		0.83		ug/L		05/05/16 08:14	05/13/16 09:00	
Benzo[k]fluoranthene	<0.17		0.17	0.053	-		05/05/16 08:14	05/13/16 09:00	
Bis(2-chloroethoxy)methane	<1.7		1.7		ug/L		05/05/16 08:14	05/13/16 09:00	
Bis(2-chloroethyl)ether	0.97	J	1.7		ug/L		05/05/16 08:14	05/13/16 09:00	
Bis(2-ethylhexyl) phthalate	2.0		8.3		ug/L		05/05/16 08:14	05/13/16 09:00	
4-Bromophenyl phenyl ether	<4.1		4.1		ug/L			05/13/16 09:00	
Butyl benzyl phthalate	<1.7		1.7		ug/L			05/13/16 09:00	
Carbazole	<4.1		4.1		ug/L			05/13/16 09:00	
4-Chloroaniline		∕ UJ	8.3		ug/L			05/13/16 09:00	
4-Chloro-3-methylphenol	<8.3	00	8.3		ug/L			05/13/16 09:00	
2-Chloronaphthalene	<1.7		1.7		ug/L			05/13/16 09:00	
2-Chlorophenol	5.8		4.1		ug/L			05/13/16 09:00	
4-Chlorophenyl phenyl ether	<4.1		4.1		ug/L			05/13/16 09:00	
Chrysene	<0.41		0.41	0.056				05/13/16 09:00	
Dibenz(a,h)anthracene	<0.25		0.41	0.042	-			05/13/16 09:00	
Dibenzofuran	<1.7		1.7					05/13/16 09:00	
3,3'-Dichlorobenzidine	<4.1		4.1		ug/L ug/L			05/13/16 09:00	
								05/13/16 09:00	
2,4-Dichlorophenol	<8.3		8.3 1.7		ug/L			05/13/16 09:00	
Diethyl phthalate	0.50 <8.3				ug/L			05/13/16 09:00	
2,4-Dimethylphenol		^ UJ	8.3		ug/L				
Dimethyl phthalate	<1.7		1.7		ug/L			05/13/16 09:00	
Di-n-butyl phthalate	1.9	J	4.1		ug/L			05/13/16 09:00	
1,6-Dinitro-2-methylphenol	<17		17		ug/L			05/13/16 09:00	
2,4-Dinitrophenol	<17		17		ug/L			05/13/16 09:00	
2,4-Dinitrotoluene	<0.83		0.83		ug/L			05/13/16 09:00	
2,6-Dinitrotoluene	<0.41		0.41	0.061				05/13/16 09:00	
Di-n-octyl phthalate	<8.3		8.3	0.87	ug/L		05/05/16 08:14	05/13/16 09:00	

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 16:17 Matrix: Water Date Received: 04/30/16 07:34

Method: 8270D - Semivolat Analyte		Qualifier	ŘĹ	MDL		D	Prepared	Analyzed	Dil Fa
Fluoranthene	<0.83		0.83	0.38	ug/L		05/05/16 08:14	05/13/16 09:00	
Fluorene	0.59	J	0.83		ug/L		05/05/16 08:14	05/13/16 09:00	
Hexachlorobenzene	<0.41		0.41	0.066			05/05/16 08:14	05/13/16 09:00	
Hexachlorobutadiene	<4.1		4.1		ug/L		05/05/16 08:14	05/13/16 09:00	
Hexachlorocyclopentadiene	<17		17		ug/L			05/13/16 09:00	
Hexachloroethane	<4.1		4.1		ug/L			05/13/16 09:00	
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.062	_			05/13/16 09:00	
Isophorone	<1.7		1.7		ug/L			05/13/16 09:00	
2-Methylphenol	<1.7		1.7		ug/L			05/13/16 09:00	
3 & 4 Methylphenol	6.8		1.7		ug/L			05/13/16 09:00	
2-Nitroaniline	<4.1		4.1		ug/L			05/13/16 09:00	
3-Nitroaniline	<8.3		8.3		ug/L			05/13/16 09:00	
4-Nitroaniline	<8.3		8.3		ug/L			05/13/16 09:00	
Nitrobenzene	<0.83		0.83		ug/L			05/13/16 09:00	
2-Nitrophenol	<8.3		8.3		ug/L			05/13/16 09:00	
4-Nitrophenol	<17		17		ug/L			05/13/16 09:00	
N-Nitrosodi-n-propylamine	<0.41		0.41		ug/L			05/13/16 09:00	
N-Nitrosodiphenylamine	4.0		0.83		ug/L			05/13/16 09:00	
2,2'-oxybis[1-chloropropane]	4.0 <1.7		1.7		ug/L			05/13/16 09:00	
Pentachlorophenol	<17		17		ug/L			05/13/16 09:00	
Phenanthrene	0.33	.,	0.83		ug/L			05/13/16 09:00	
Phenanthrene Phenol	0.33 <4.1	J	4.1		ug/L ug/L			05/13/16 09:00	
					_				
Pyrene	<0.83		0.83		ug/L			05/13/16 09:00 05/13/16 09:00	
2,4,5-Trichlorophenol	<8.3		8.3		ug/L				
2,4,6-Trichlorophenol	<4.1		4.1		ug/L			05/13/16 09:00	
Benzaldehyde	-47-	R	-17		ug/L			05/13/16 09:00	
Caprolactam	<8.3		8.3		ug/L			05/13/16 09:00	
Atrazine	<4.1		4.1		ug/L			05/13/16 09:00	
1,1'-Biphenyl	0.70	J	4.1	0.30	ug/L		05/05/16 08:14	05/13/16 09:00	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	64		30 - 123				05/05/16 08:14		
2-Fluorophenol (Surr)	60		30 - 110					05/13/16 09:00	
Nitrobenzene-d5 (Surr)	69		33 - 139					05/13/16 09:00	
Phenol-d5 (Surr)	46		20 - 100				05/05/16 08:14	05/13/16 09:00	
Terphenyl-d14 (Surr)	99		42 - 150				05/05/16 08:14	05/13/16 09:00	
2,4,6-Tribromophenol (Surr)	86		30 - 150				05/05/16 08:14	05/13/16 09:00	
Method: 8270D - Semivolat	tile Organic Co	mpounds	(GC/MS) - DL						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
2-Methylnaphthalene	120	D	4.1	0.54	ug/L		05/05/16 08:14	05/13/16 00:51	1
Naphthalene	90	D	8.3	2.6	ug/L		05/05/16 08:14	05/13/16 00:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	77		30 - 123					05/13/16 00:51	1
2-Fluorophenol (Surr)	60		30 - 110					05/13/16 00:51	1
Nitrobenzene-d5 (Surr)	84		33 - 139					05/13/16 00:51	1
Phenol-d5 (Surr)	51		20 - 100					05/13/16 00:51	
Terphenyl-d14 (Surr)	118		42 - 150					05/13/16 00:51	1
2,4,6-Tribromophenol (Surr)	98		30 - 150					05/13/16 00:51	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 16:17 Matrix: Water

Method: 8081B - Organochlori	ine Pesticide	es (GC)							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Aldrin	<0.042		0.042	0.0055	-		05/02/16 16:20	05/03/16 15:35	
llpha-BHC	<0.042		0.042	0.0027	-		05/02/16 16:20	05/03/16 15:35	
llpha-Chlordane	< 0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 15:35	
eta-BHC	< 0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	
4,4'-DDD	< 0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	
4,4'-DDE	< 0.042		0.042	0.0039	ug/L		05/02/16 16:20	05/03/16 15:35	
l,4'-DDT	<0.042		0.042	0.0033	ug/L		05/02/16 16:20	05/03/16 15:35	
lelta-BHC	< 0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	
Dieldrin	< 0.042		0.042	0.013	ug/L		05/02/16 16:20	05/03/16 15:35	
Endosulfan I	<0.042		0.042	0.0043	ug/L		05/02/16 16:20	05/03/16 15:35	
Endosulfan II	< 0.042		0.042	0.0029	ug/L		05/02/16 16:20	05/03/16 15:35	
Endosulfan sulfate	< 0.042		0.042	0.012	ug/L		05/02/16 16:20	05/03/16 15:35	
Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 15:35	
Endrin aldehyde	< 0.042		0.042	0.0085	ug/L		05/02/16 16:20	05/03/16 15:35	
Endrin ketone	< 0.042		0.042	0.018	ug/L		05/02/16 16:20	05/03/16 15:35	
gamma-BHC (Lindane)	<0.042		0.042	0.0058	ug/L		05/02/16 16:20	05/03/16 15:35	
jamma-Chlordane	< 0.042		0.042	0.0075	ug/L		05/02/16 16:20	05/03/16 15:35	
Heptachlor	< 0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	
Heptachlor epoxide	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	
Methoxychlor	< 0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 15:35	
oxaphene	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 15:35	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
							25/20/12 12 22		
OCB Decachlorobiphenyl	82		30 - 143				05/02/16 16:20	05/03/16 15:35	
DCB Decachlorobiphenyl Fetrachloro-m-xylene	82 142	X	30 - 143 30 - 120				05/02/16 16:20 05/02/16 16:20		
Fetrachloro-m-xylene	142		30 - 120	omatogr	aphv				
, ,	142 Z		30 - 120	omatogr MDL		D			
Tetrachloro-m-xylene Method: 8082A - Polychlorinat	142 Z	ls (PCBs)	30 - 120 by Gas Chr	_	Unit	<u>D</u>	05/02/16 16:20	05/03/16 15:35	Dil Fa
Tetrachloro-m-xylene Method: 8082A - Polychlorinat Analyte	ted Biphenyl Result	ls (PCBs)	30 - 120 by Gas Chr RL	MDL 0.070	Unit	<u>D</u>	05/02/16 16:20 Prepared	05/03/16 15:35 Analyzed 05/03/16 17:06	Dil Fa
Tetrachloro-m-xylene Method: 8082A - Polychlorinat Analyte PCB-1016	ted Biphenyl Result <0.42	ls (PCBs)	30 - 120 by Gas Chr RL 0.42	0.070 0.21	Unit ug/L ug/L	<u>D</u>	05/02/16 16:20 Prepared 05/02/16 16:20	05/03/16 15:35 Analyzed 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221	142 2 ted Biphenyl Result <0.42 <0.42	ls (PCBs)	30 - 120 by Gas Chr RL 0.42 0.42	0.070 0.21 0.21	Unit ug/L ug/L ug/L	<u>D</u>	05/02/16 16:20 Prepared 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232	142 2 ted Biphenyl Result (<0.42 <0.42 <0.42	ls (PCBs)	30 - 120 by Gas Chr RL 0.42 0.42 0.42	0.070 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L	<u> </u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248	ted Biphenyl Result (<0.42 <0.42 <0.42 <0.42 <0.42 <0.42	ls (PCBs)	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242	ted Biphenyl Result (<0.42 <0.42 <0.42 <0.42	ls (PCBs)	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260	ted Biphenyl Result (<0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42	Is (PCBs) Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260	ted Biphenyl Result <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42	Is (PCBs) Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 Limits	0.070 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared	Analyzed O5/03/16 17:06 Analyzed	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260	ted Biphenyl Result <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42	Is (PCBs) Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20	Analyzed O5/03/16 17:06 Analyzed	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene DCB Decachlorobiphenyl	ted Biphenyl Result 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 73 	Is (PCBs) Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	D	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 Surrogate Tetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP)	ted Biphenyl Result (Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 1.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.21 0.73	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte	ted Biphenyl Result (Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 1.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.73	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	D	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1248 PCB-1254 PCB-1256 Surrogate Tetrachloro-m-xylene DCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Aluminum	ted Biphenyl Result <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.542 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42	Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	0.070 0.21 0.21 0.21 0.21 0.21 0.073	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1254 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Auminum Antimony	ted Biphenyl Result <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.62 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42 <0.42	Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.073 MDL 0.062 0.0064	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 17:06	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Aluminum Antimony Arsenic	### 142 2 ted Biphenyl Result (0.42	Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.073 MDL 0.062 0.0064 0.0031	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1254 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Aluminum Antimony Arsenic Barium	## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2	Is (PCBs) Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.073 MDL 0.062 0.0064 0.0031 0.0022	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49	Dil Fa
Method: 8082A - Polychlorinate Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Aluminum Antimony Arsenic Barium Beryllium	## Ted Biphenyl Result	ls (PCBs) Qualifier Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.073 MDL 0.062 0.0064 0.0031 0.0022 0.00085	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49	Dil Fa
Method: 8082A - Polychlorinat Analyte PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1254 PCB-1254 PCB-1260 Surrogate Fetrachloro-m-xylene PCB Decachlorobiphenyl Method: 6010C - Metals (ICP) Analyte Aluminum Antimony Arsenic Barium	## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2 ## 142 2	Is (PCBs) Qualifier Qualifier Qualifier	30 - 120 by Gas Chr RL 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42	MDL 0.070 0.21 0.21 0.21 0.21 0.21 0.073 MDL 0.062 0.0064 0.0031 0.0022	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L		Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 Prepared 05/02/16 16:20 Prepared 05/02/16 16:20 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28 05/02/16 09:28	Analyzed 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 05/03/16 17:06 Analyzed 05/03/16 17:06 Analyzed 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49 05/03/16 18:49	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/28/16 16:17 Matrix: Water Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:49	
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:49	
Iron	37	y ′ J	0.20		mg/L		05/02/16 09:28	05/03/16 18:49	
Lead	0.0034	*	0.0050	0.0024	-		05/02/16 09:28	05/03/16 18:49	
Magnesium	52		0.10	0.034	Ü		05/02/16 09:28	05/03/16 18:49	
Manganese	0.39	X	0.010	0.0034	-			05/03/16 18:49	
Nickel	0.0046	*	0.010	0.0031	•			05/03/16 18:49	
Potassium	33		0.50		mg/L			05/03/16 18:49	
Selenium	<0.010		0.010	0.0046	-			05/03/16 18:49	
Silver	< 0.0050		0.0050	0.0013	•			05/03/16 18:49	
Sodium	150		1.0		mg/L			05/03/16 18:49	
Thallium	<0.010		0.010	0.0028	-			05/03/16 18:49	
Vanadium	< 0.0050		0.0050	0.0019	•			05/03/16 18:49	
Zinc	0.093		0.020	0.0090	•			05/03/16 18:49	
Line	0.030		0.020	0.0000	mg/ L		00,02,10 00.20	00,00,10 10.10	
Method: 6010C - Metals (IC						_			
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20		0.20	0.062	_		05/02/16 09:28	05/03/16 18:58	
Antimony	<0.020		0.020	0.0064	•		05/02/16 09:28		
Arsenic	<0.010		0.010	0.0031			05/02/16 09:28		
Barium	0.32		0.010	0.0022	•		05/02/16 09:28		
Beryllium	<0.0040		0.0040	0.00085	-		05/02/16 09:28		
Cadmium	0.0014	J	0.0020	0.00094			05/02/16 09:28		
Calcium	110	J	0.20	0.059	•		05/02/16 09:28	05/03/16 18:58	
Chromium	0.0027	J	0.010	0.0024	-		05/02/16 09:28	05/03/16 18:58	
Cobalt	<0.0050		0.0050	0.00096	-		05/02/16 09:28	05/03/16 18:58	
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:58	
Iron	40	J	0.20		mg/L		05/02/16 09:28	05/03/16 18:58	
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:58	
Magnesium	57		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:58	
Manganese	0.41		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:58	
Nickel	0.0039	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:58	
Potassium	36		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:58	
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:58	
Silver	< 0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:58	
Sodium	170		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:58	
Thallium	< 0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:58	
Vanadium	< 0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:58	
Zinc	0.086	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:58	
Mathada 7470A Managan (OV(A A)								
Method: 7470A - Mercury (Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	<0.00020		0.00020	0.00011		_ <u>-</u> -		05/05/16 11:00	-
	01/44) =:								
Method: 7470A - Mercury (Analyte	,	lved Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Analyte	Result	Quantitei	KL	MDL	Jiiit	ט	riepaieu	05/05/16 11:25	רוו רמ

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1 Date Collected: 04/28/16 16:17 **Matrix: Water**

Date Received: 04/30/16 07:34

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0	- Qualifier	1.0		mg/L	<u>-</u>	Trepared	05/03/16 05:38	1
Sullide	\1.0		1.0	0.22	IIIg/L			03/03/10 03.36	,
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:17	1
Total Organic Carbon - Duplicates	21		1.0	0.23	mg/L			05/13/16 22:17	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	77		5.0	1.6	mg/L			05/03/16 11:44	1
Ammonia	43	₽´	4.0	0.86	mg/L		05/11/16 18:12	05/12/16 19:17	20
Nitrogen, Nitrite	0.0055	J	0.020	0.0032	mg/L			04/30/16 12:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:32	1

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-2

TestAmerica Job ID: 500-110948-1

Matrix: Water

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07 Date Received: 04/30/16 07:34

Method: 8260B - Volatile Orgar Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 18:46	
Benzene	0.40	J	0.50	0.15	ug/L			05/12/16 18:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 18:46	
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 18:46	1
Bromomethane	<2.0		2.0		ug/L			05/12/16 18:46	
Carbon disulfide	<2.0		2.0		ug/L			05/12/16 18:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 18:46	
Chlorobenzene	0.71	J	1.0		ug/L			05/12/16 18:46	
Chloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
Chloroform	<1.0		1.0		ug/L			05/12/16 18:46	
Chloromethane	<1.0		1.0		ug/L			05/12/16 18:46	
cis-1,2-Dichloroethene	<1.0		1.0		ug/L			05/12/16 18:46	
cis-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 18:46	
Cyclohexane	<1.0		1.0		ug/L			05/12/16 18:46	
Dibromochloromethane	<1.0		1.0		ug/L			05/12/16 18:46	
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			05/12/16 18:46	
1,2-Dibromoethane	<1.0	UJ	1.0		ug/L			05/12/16 18:46	
1,2-Dichlorobenzene	<1.0		1.0		ug/L			05/12/16 18:46	
1.3-Dichlorobenzene	<1.0		1.0		ug/L			05/12/16 18:46	· · · · · · .
1,4-Dichlorobenzene	<1.0		1.0		ug/L			05/12/16 18:46	
Dichlorodifluoromethane	<2.0		2.0		ug/L			05/12/16 18:46	
1,1-Dichloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
1,2-Dichloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
1,1-Dichloroethene	<1.0		1.0		ug/L			05/12/16 18:46	
1,2-Dichloropropane	<1.0		1.0		ug/L			05/12/16 18:46	
Ethylbenzene	<0.50		0.50		ug/L			05/12/16 18:46	
2-Hexanone	<5.0	UJ	5.0		ug/L			05/12/16 18:46	
Isopropylbenzene	<1.0		1.0		ug/L			05/12/16 18:46	
Methyl acetate	<5.0		5.0		ug/L			05/12/16 18:46	
Methylcyclohexane	<1.0		1.0		ug/L			05/12/16 18:46	
Methylene Chloride	<5.0		5.0		ug/L			05/12/16 18:46	
Methyl Ethyl Ketone	<5.0	UJ	5.0		ug/L			05/12/16 18:46	
methyl isobutyl ketone	<5.0	UJ	5.0		ug/L			05/12/16 18:46	
Methyl tert-butyl ether	<1.0		1.0		ug/L			05/12/16 18:46	
Styrene	<1.0		1.0		ug/L			05/12/16 18:46	
1,1,2,2-Tetrachloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
Tetrachloroethene	<1.0		1.0		ug/L			05/12/16 18:46	
Toluene	0.29	1	0.50		ug/L			05/12/16 18:46	
trans-1,2-Dichloroethene	<1.0	3	1.0		ug/L			05/12/16 18:46	
trans-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 18:46	
1,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/12/16 18:46	
1,1,1-Trichloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
1,1,2-Trichloroethane	<1.0		1.0		ug/L			05/12/16 18:46	
Trichloroethene	<0.50		0.50		ug/L ug/L			05/12/16 18:46	
Trichlorofluoromethane	<1.0		1.0		ug/L ug/L			05/12/16 18:46	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0		ug/L ug/L			05/12/16 18:46	
Vinyl chloride	<0.50		0.50		ug/L ug/L			05/12/16 18:46	
Xylenes, Total	<1.0		1.0		ug/L ug/L			05/12/16 18:46	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2 Date Collected: 04/29/16 07:07 **Matrix: Water** Date Received: 04/30/16 07:34

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98	71 - 120		05/12/16 18:46	1
Dibromofluoromethane	96	70 - 120		05/12/16 18:46	1
1,2-Dichloroethane-d4 (Surr)	93	71 - 127		05/12/16 18:46	1
Toluene-d8 (Surr)	102	75 - 120		05/12/16 18:46	1

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.81	0.81	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acenaphthylene	<0.81	0.81	0.22	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acetophenone	<4.1	4.1	0.54	ug/L		05/05/16 08:14	05/13/16 01:18	1
Anthracene	<0.81	0.81	0.27	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]anthracene	<0.16	0.16	0.046	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]pyrene	<0.16	0.16	0.080	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[b]fluoranthene	<0.16	0.16	0.065	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[g,h,i]perylene	<0.81	0.81	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[k]fluoranthene	<0.16	0.16	0.052	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethoxy)methane	<1.6	1.6	0.23	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethyl)ether	<1.6	1.6	0.24	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-ethylhexyl) phthalate	<8.1	8.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Bromophenyl phenyl ether	<4.1	4.1	0.44	ug/L		05/05/16 08:14	05/13/16 01:18	1
Butyl benzyl phthalate	<1.6	1.6	0.39	ug/L		05/05/16 08:14	05/13/16 01:18	1
Carbazole	<4.1	4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloroaniline	<8.1 ≁ UJ	8.1	1.6	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloro-3-methylphenol	<8.1	8.1	1.9	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chloronaphthalene	<1.6	1.6	0.19	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chlorophenol	<4.1	4.1	0.45	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chlorophenyl phenyl ether	<4.1	4.1	0.52	ug/L		05/05/16 08:14	05/13/16 01:18	1
Chrysene	<0.41	0.41	0.055	_		05/05/16 08:14	05/13/16 01:18	1
Dibenz(a,h)anthracene	<0.24	0.24	0.041			05/05/16 08:14	05/13/16 01:18	1
Dibenzofuran	<1.6	1.6		ug/L		05/05/16 08:14	05/13/16 01:18	1
3,3'-Dichlorobenzidine	<4.1	4.1		ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dichlorophenol	<8.1	8.1	2.1	ug/L		05/05/16 08:14	05/13/16 01:18	1
Diethyl phthalate	3.0	1.6		_		05/05/16 08:14	05/13/16 01:18	1
2,4-Dimethylphenol	<8.1 🚩 UJ	8.1		ug/L		05/05/16 08:14	05/13/16 01:18	1
Dimethyl phthalate	<1.6	1.6	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Di-n-butyl phthalate	<4.1	4.1		ug/L		05/05/16 08:14	05/13/16 01:18	1
4,6-Dinitro-2-methylphenol	<16	16		ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrophenol	<16	16	7.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrotoluene	<0.81	0.81	0.20	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,6-Dinitrotoluene	<0.41	0.41	0.060	_		05/05/16 08:14	05/13/16 01:18	1
Di-n-octyl phthalate	<8.1	8.1		ug/L		05/05/16 08:14	05/13/16 01:18	1
Fluoranthene	<0.81	0.81	0.37	_		05/05/16 08:14	05/13/16 01:18	1
Fluorene	<0.81	0.81		ug/L			05/13/16 01:18	1
Hexachlorobenzene	<0.41	0.41	0.064	-		05/05/16 08:14	05/13/16 01:18	1
Hexachlorobutadiene	<4.1	4.1		ug/L			05/13/16 01:18	1
Hexachlorocyclopentadiene	<16	16		ug/L			05/13/16 01:18	1
Hexachloroethane	<4.1	4.1		ug/L			05/13/16 01:18	1
Indeno[1,2,3-cd]pyrene	<0.16	0.16	0.061	_			05/13/16 01:18	1
Isophorone	<1.6	1.6		ug/L			05/13/16 01:18	1
2-Methylnaphthalene	0.19 J	0.41	0.053				05/13/16 01:18	· · · · · · · · 1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

gamma-Chlordane

Date Collected: 04/29/16 07:07

Matrix: Water

Method: 8270D - Semivola: Analyte		mpounds Qualifier	(GC/MS) (Co	ntinued MDL		D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.6	- Guainioi	1.6		ug/L		05/05/16 08:14		1
3 & 4 Methylphenol	<1.6		1.6		ug/L		05/05/16 08:14		1
Naphthalene	<0.81		0.81		ug/L			05/13/16 01:18	
2-Nitroaniline	<4.1		4.1		ug/L			05/13/16 01:18	1
3-Nitroaniline	<8.1		8.1		ug/L			05/13/16 01:18	1
4-Nitroaniline	<8.1		8.1		ug/L			05/13/16 01:18	
Nitrobenzene	<0.81		0.81		ug/L			05/13/16 01:18	1
2-Nitrophenol	<8.1		8.1		ug/L			05/13/16 01:18	1
4-Nitrophenol	<16		16		ug/L			05/13/16 01:18	
N-Nitrosodi-n-propylamine	<0.41		0.41		ug/L			05/13/16 01:18	1
N-Nitrosodiphenylamine	0.72	4	0.41		ug/L			05/13/16 01:18	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6		ug/L			05/13/16 01:18	' 1
Pentachlorophenol	<16		1.6		ug/L			05/13/16 01:18	1
Pentachiorophenoi Phenanthrene	<0.81		0.81		ug/L ug/L			05/13/16 01:18	1
Phenol	<4.1		4.1		ug/L ug/L			05/13/16 01:18	1
	<0.81		0.81		_			05/13/16 01:18	1
Pyrene	<8.1		8.1		ug/L			05/13/16 01:18	
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol					ug/L				1
' '	<4.1		4.1		ug/L			05/13/16 01:18	1
Benzaldehyde	_ <16	1.5	-16 -		ug/L			05/13/16 01:18	1
Caprolactam	2.9	J	8.1		ug/L			05/13/16 01:18	1
Atrazine	<4.1		4.1		ug/L			05/13/16 01:18	1
1,1'-Biphenyl	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	77		30 - 123				05/05/16 08:14	05/13/16 01:18	1
2-Fluorophenol (Surr)	70		30 - 110				05/05/16 08:14	05/13/16 01:18	1
Nitrobenzene-d5 (Surr)	82		33 - 139				05/05/16 08:14	05/13/16 01:18	1
Phenol-d5 (Surr)	54		20 - 100				05/05/16 08:14	05/13/16 01:18	1
Terphenyl-d14 (Surr)	100		42 - 150				05/05/16 08:14	05/13/16 01:18	1
2,4,6-Tribromophenol (Surr)	88		30 - 150				05/05/16 08:14	05/13/16 01:18	1
Method: 8081B - Organoch	nlorine Pesticid	es (GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0055	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-Chlordane	<0.041		0.041	0.0046	ug/L		05/02/16 16:20	05/03/16 15:54	1
beta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDD	< 0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDE	<0.041		0.041	0.0039	_		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDT	<0.041		0.041	0.0033			05/02/16 16:20	05/03/16 15:54	1
delta-BHC	<0.041		0.041	0.011	_		05/02/16 16:20	05/03/16 15:54	1
Dieldrin	<0.041		0.041	0.013	_		05/02/16 16:20	05/03/16 15:54	1
Endosulfan I	<0.041		0.041	0.0042				05/03/16 15:54	1
Endosulfan II	<0.041		0.041	0.0029	_			05/03/16 15:54	1
Endosulfan sulfate	<0.041		0.041	0.012	_			05/03/16 15:54	1
	0.011								
	<0.041		() ()41	0.015	11(1/1		U5/UZ/Th Th ZU	05/03/16 15:54	
Endrin	<0.041 <0.041		0.041 0.041	0.015 0.0085	_			05/03/16 15:54 05/03/16 15:54	1
Endrin Endrin aldehyde	<0.041		0.041	0.0085	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin Endrin aldehyde Endrin ketone gamma-BHC (Lindane)					ug/L ug/L		05/02/16 16:20 05/02/16 16:20		

05/02/16 16:20 05/03/16 15:54

0.041

< 0.041

0.0075 ug/L

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 07:07

Date Received: 04/30/16 07:34

Matrix: Water

Analyte	nochlorine Pesticid Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Heptachlor	<0.041		0.041	0.014			05/02/16 16:20	05/03/16 15:54	
Heptachlor epoxide	<0.041		0.041	0.014	-		05/02/16 16:20	05/03/16 15:54	
Methoxychlor	<0.083		0.083	0.024	-		05/02/16 16:20	05/03/16 15:54	
Гохарhene	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 15:54	
·					Ü				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	66		30 - 143				05/02/16 16:20	05/03/16 15:54	
Tetrachloro-m-xylene	65		30 - 120				05/02/16 16:20	05/03/16 15:54	
Method: 8082A - Poly	chlorinated Bipheny	ıls (PCBs)	by Gas Chi	omatogr	anhv				
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
PCB-1016	<0.41		0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1221	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1232	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1242	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1248	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1254	<0.41		0.41		ug/L		05/02/16 16:20	05/03/16 17:21	
PCB-1260	<0.41		0.41	0.073	-		05/02/16 16:20	05/03/16 17:21	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	76/10/00/01/9	Qualifici	30 - 127				05/02/16 16:20	05/03/16 17:21	
OCB Decachlorobiphenyl	67		30 - 121 30 - 150				05/02/16 16:20		
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•		00 = 700				00.02.0.0.20	00.00.101.121	
Method: 6010C - Meta	Is (ICP)								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20		0.20	0.062	_		05/02/16 09:28	05/03/16 19:02	
Antimony	<0.020		0.020	0.0064	Ü		05/02/16 09:28	05/03/16 19:02	
Arsenic	<0.010		0.010	0.0031	-		05/02/16 09:28	05/03/16 19:02	
Barium	0.12		0.010	0.0022	_		05/02/16 09:28	05/03/16 19:02	
Beryllium	<0.0040		0.0040	0.00085	•		05/02/16 09:28	05/03/16 19:02	
Cadmium	0.0014	J	0.0020	0.00094	J		05/02/16 09:28	05/03/16 19:02	
Calcium	210	J	0.20	0.059	_		05/02/16 09:28	05/03/16 19:02	
Chromium	<0.010		0.010	0.0024	_		05/02/16 09:28	05/03/16 19:02	
Cobalt	<0.0050		0.0050	0.00096	J		05/02/16 09:28	05/03/16 19:02	
Copper	0.0023		0.010	0.0022	_			05/03/16 19:02	
ron	20	-	0.20		mg/L		05/02/16 09:28		
.ead	0.0043	J	0.0050	0.0024	_		05/02/16 09:28	05/03/16 19:02	
/lagnesium	94		0.10		mg/L			05/03/16 19:02	
/langanese	1.1		0.010	0.0034	_			05/03/16 19:02	
lickel	0.0077	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:02	
Potassium	94		0.50	0.16	mg/L			05/03/16 19:02	
Selenium	< 0.010 -0.0060	JB UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:02	
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:02	
Sodium	320		1.0		mg/L			05/03/16 19:02	
-hallium	<0.010		0.010	0.0028	_		05/02/16 09:28	05/03/16 19:02	
/anadium	<0.0050		0.0050	0.0019	_		05/02/16 09:28	05/03/16 19:02	
Zinc	0.026		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:02	
Method: 6010C - Meta	ls (ICP) - Dissolved								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
				0.062				-	

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07 Matrix: Water Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:07	-
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	
Barium	0.12		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:07	•
Cadmium	0.0011	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:07	
Calcium	210	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:07	
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	
Cobalt	< 0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:07	
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	
Iron	19	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:07	•
Lead	< 0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	
Magnesium	95		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:07	• • • • • • • •
Manganese	1.1		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:07	
Nickel	0.0062	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	•
Potassium	92		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:07	
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:07	•
Silver	< 0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:07	
Sodium	310		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:07	•
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:07	
Vanadium	< 0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:07	
Zinc	0.0092	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:07	
Method: 7470A - Mercury (CVA	•					_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:27	•
Method: 7470A - Mercury (CVA) Analyte	,	lved Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020	- Guanner	0.00020	0.00011			05/04/16 15:00		Dilla
	₹0.00020		0.00020	0.00011	mg/L		03/04/10 13:00	03/03/10 11.29	
General Chemistry	D	0	DI	MDI	1114	_	D	Amalamad	D!! E-
Analyte		Qualifier	RL -	MDL		D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:41	
Sulfate	420		100		mg/L			05/06/16 09:20	20
Total Organic Carbon - Duplicates	11		1.0		mg/L			05/13/16 22:38	
Nitrogen, Nitrate	<0.10		0.10	0.045	•			05/13/16 15:09	
Total Suspended Solids	49	-/	5.0		mg/L		05/44/40 40 40	05/03/16 11:45	
Ammonia	4.0		0.20	0.043	•		05/11/16 18:12	05/12/16 19:20	
Nitrogen, Nitrite	0.0032	J	0.020	0.0032	-			04/30/16 12:20	,
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:34	

Lab Sample ID: 500-110948-2

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-3

TestAmerica Job ID: 500-110948-1

Matrix: Water

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47 Date Received: 04/30/16 07:34

Method: 8260B - Volatile Orga Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	33		5.0	1.7	ug/L			05/12/16 19:12	1
Benzene	7.0		0.50		ug/L			05/12/16 19:12	1
Bromodichloromethane	<1.0		1.0		ug/L			05/12/16 19:12	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 19:12	1
Bromomethane	<2.0		2.0		ug/L			05/12/16 19:12	1
Carbon disulfide	<2.0		2.0		ug/L			05/12/16 19:12	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 19:12	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 19:12	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 19:12	
cis-1,2-Dichloroethene	4.7		1.0	0.41	ug/L			05/12/16 19:12	
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 19:12	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 19:12	
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 19:12	
1,2-Dichlorobenzene	2.4		1.0	0.33	ug/L			05/12/16 19:12	
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 19:12	
1,4-Dichlorobenzene	13		1.0	0.36	ug/L			05/12/16 19:12	
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 19:12	
1,1-Dichloroethane	0.51	J	1.0	0.41	ug/L			05/12/16 19:12	
1,2-Dichloroethane	1.4		1.0	0.39	ug/L			05/12/16 19:12	
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	•
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	
Ethylbenzene	100		0.50	0.18	ug/L			05/12/16 19:12	•
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 19:12	•
Isopropylbenzene	6.7		1.0	0.39	ug/L			05/12/16 19:12	
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 19:12	•
Methylcyclohexane	1.1		1.0	0.32	ug/L			05/12/16 19:12	•
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 19:12	
Methyl Ethyl Ketone	14	J	5.0	2.1	ug/L			05/12/16 19:12	
methyl isobutyl ketone	27	J	5.0	2.2	ug/L			05/12/16 19:12	
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 19:12	
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 19:12	
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 19:12	
Toluene	160		0.50	0.15	ug/L			05/12/16 19:12	
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 19:12	
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 19:12	
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 19:12	
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 19:12	
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 19:12	
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 19:12	
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 19:12	1
Vinyl chloride	4.1		0.50	0.20	ug/L			05/12/16 19:12	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 08:47

Date Received: 04/30/16 07:34

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		71 - 120					05/12/16 19:12	1
Dibromofluoromethane	96		70 - 120					05/12/16 19:12	1
1,2-Dichloroethane-d4 (Surr)	94		71 - 127					05/12/16 19:12	1
Toluene-d8 (Surr)	105		75 - 120					05/12/16 19:12	1
Method: 8260B - Volatile C	organic Compo	unds (GC/	MS) - DL						
Analyte	Result	Qualifier	RL	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	380	D	5.0	1.1 ι	ıg/L			05/12/16 19:39	5
			,						5"
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		71 - 120					05/12/16 19:39	5
Dibromofluoromethane	97		70 - 120					05/12/16 19:39	5
1,2-Dichloroethane-d4 (Surr)	94		71 - 127					05/12/16 19:39	5
Toluene-d8 (Surr)	101		75 - 120					05/12/16 19:39	5
Method: 8270D - Semivolati Analyte	•	mpounds Qualifier	(GC/MS) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.6		8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acenaphthylene	<8.6		8.6	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acetophenone	<43		43	5.7	ug/L		05/05/16 08:14	05/13/16 09:27	10

Analyte	Result	Qualifier	ŔL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.6		8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acenaphthylene	<8.6		8.6	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acetophenone	<43		43	5.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Anthracene	<8.6		8.6	2.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]anthracene	<1.7		1.7	0.49	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]pyrene	<1.7		1.7	0.85	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[b]fluoranthene	<1.7		1.7	0.70	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[g,h,i]perylene	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[k]fluoranthene	<1.7		1.7	0.55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-ethylhexyl) phthalate	85	JD	86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Bromophenyl phenyl ether	<43		43	4.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Carbazole	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloroaniline	<86	UJ	86	17	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloro-3-methylphenol	<86		86	20	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chlorophenol	<43		43	4.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chlorophenyl phenyl ether	<43		43	5.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Chrysene	<4.3		4.3	0.59	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenz(a,h)anthracene	<2.6		2.6	0.44	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenzofuran	<17		17	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
3,3'-Dichlorobenzidine	<43		43	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
Diethyl phthalate	<17		17	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dimethylphenol	110	✓ JD	86	16	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dimethyl phthalate	<17		17	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-butyl phthalate	<43		43	6.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
4,6-Dinitro-2-methylphenol	<170		170	51	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrophenol	<170		170	74	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrotoluene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,6-Dinitrotoluene	<4.3		4.3	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-octyl phthalate	<86		86	9.1	ug/L		05/05/16 08:14	05/13/16 09:27	10

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 08:47 Date Received: 04/30/16 07:34

Terphenyl-d14 (Surr)

2,4,6-Tribromophenol (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Fluorene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobenzene	<4.3		4.3	0.68	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobutadiene	<43		43	4.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorocyclopentadiene	<170		170	55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachloroethane	<43		43	5.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylnaphthalene	<4.3		4.3	0.56	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylphenol	20	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 09:27	10
3 & 4 Methylphenol	96	D	17	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Naphthalene	16	D	8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitroaniline	<43		43	11	ug/L		05/05/16 08:14	05/13/16 09:27	10
3-Nitroaniline	<86		86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitroaniline	<86		86	14	ug/L		05/05/16 08:14	05/13/16 09:27	10
Nitrobenzene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitrophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitrophenol	<170		170	64	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodi-n-propylamine	<4.3		4.3	1.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodiphenylamine	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,2'-oxybis[1-chloropropane]	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pentachlorophenol	<170		170	34	ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenanthrene	<8.6		8.6		ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenol	40	JD	43	5.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pyrene	<8.6		8.6	3.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,5-Trichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,6-Trichlorophenol	<43		43		ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzaldehyde	170 کـ	✓ R	-170	130	ug/L		05/05/16 08:14	05/13/16 09:27	10
Caprolactam	<86		86	13	ug/L		05/05/16 08:14	05/13/16 09:27	10
Atrazine	<43		43	5.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
1,1'-Biphenyl	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	91		30 - 123				05/05/16 08:14	05/13/16 09:27	10
2-Fluorophenol (Surr)	69		30 - 110				05/05/16 08:14	05/13/16 09:27	10
Nitrobenzene-d5 (Surr)	89		33 - 139				05/05/16 08:14	05/13/16 09:27	10
Phenol-d5 (Surr)	60		20 - 100				05/05/16 08:14	05/13/16 09:27	10

Method: 8081B - Organ	ochlorine Pesticides (GC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043	0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-BHC	<0.043	0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-Chlordane	<0.043	0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 16:13	1
beta-BHC	<0.043	0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDD	<0.043	0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDE	<0.043	0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDT	<0.043	0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 16:13	1
delta-BHC	<0.043	0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1

42 - 150

30 - 150

106

105

05/05/16 08:14 05/13/16 09:27

05/05/16 08:14 05/13/16 09:27

10

10

Matrix: Water

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 08:47

Date Received: 04/30/16 07:34

Matrix: Water

Method: 8081B - Organochlori	ne Pesticid	les (GC) (C	continued)						
Analyte		Qualifier	RĹ	MDL		D	Prepared	Analyzed	Dil Fa
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	
Endosulfan I	<0.043		0.043	0.0045	ug/L		05/02/16 16:20	05/03/16 16:13	
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:13	
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:13	
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	
Endrin aldehyde	< 0.043		0.043	0.0089	ug/L		05/02/16 16:20	05/03/16 16:13	
Endrin ketone	< 0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 16:13	
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 16:13	
gamma-Chlordane	< 0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 16:13	
Heptachlor	< 0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	
Methoxychlor	<0.087		0.087	0.025	-		05/02/16 16:20	05/03/16 16:13	
Toxaphene	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 16:13	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	40		30 - 143				05/02/16 16:20	05/03/16 16:13	-
Tetrachloro-m-xylene	110		30 - 120				05/02/16 16:20	05/03/16 16:13	
Method: 8082A - Polychlorinat	ed Biphen	/Is (PCBs)	by Gas Chr	omatogr	aphv				
Analyte		Qualifier	RL	_	Unit	D	Prepared	Analyzed	Dil Fa
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 17:36	
PCB-1016	< 0.43		0.43	0.073	-		05/02/16 16:20	05/03/16 17:36	
PCB-1221	< 0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1221	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1232	_6. 5	_	0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1232	4.9		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1242	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1242	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1248	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1248	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1254	<0.43		0.43	0.22	-		05/02/16 16:20	05/03/16 17:36	
PCB-1254					-			05/03/16 17:36	
	<0.43		0.43	0.22	-				
PCB-1260	<0.43		0.43	0.076	-			05/03/16 17:36	
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 17:36	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	57		30 - 127				05/02/16 16:20	05/03/16 17:36	
Tetrachloro-m-xylene	30		30 - 127				05/02/16 16:20	05/03/16 17:36	
DCB Decachlorobiphenyl	22	X	30 - 150				05/02/16 16:20	05/03/16 17:36	
DCB Decachlorobiphenyl	28	X	30 - 150				05/02/16 16:20	05/03/16 17:36	
Method: 6010C - Metals (ICP)									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	0.47		0.20	0.062	-		05/02/16 09:28	05/03/16 19:12	
Antimony	<0.020		0.020	0.0064	O		05/02/16 09:28	05/03/16 19:12	
Arsenic	0.024		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	
Barium	0.29		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:12	
Cadmium	0.0022		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:12	
Calcium	30		0.20	0.059			05100110 00 00	05/03/16 19:12	

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 08:47

Date Received: 04/30/16 07:34

Matrix: Water

Analyte	CP) (Continued Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.13		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	
Cobalt	0.032		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:12	
Copper	0.012		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	
Iron	2.0	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:12	
Lead	0.11		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	
Magnesium	28		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:12	
Manganese	0.0099	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:12	
Nickel	0.13	i	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	
Potassium	570		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:12	
Selenium	< 0.010 - 0.0081	JB UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:12	
Silver	<0.0050	1	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:12	
Sodium	3100		100	43	mg/L		05/02/16 09:28	05/05/16 15:42	100
Thallium	<0.010)	0.010	0.0028	-		05/02/16 09:28	05/03/16 19:12	1
Vanadium	0.057		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:12	
Zinc	0.17	,	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:12	
Method: 6010C - Metals (I	CP) - Dissolved	I							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Aluminum	0.38		0.20	0.062	-		05/02/16 09:28	05/03/16 19:18	•
Antimony	<0.020	1	0.020	0.0064	_		05/02/16 09:28	05/03/16 19:18	•
Arsenic	0.024		0.010	0.0031	-		05/02/16 09:28	05/03/16 19:18	
Barium	0.31		0.010	0.0022	_		05/02/16 09:28	05/03/16 19:18	•
Beryllium	<0.0040		0.0040	0.00085	-		05/02/16 09:28	05/03/16 19:18	•
Cadmium	0.0016		0.0020	0.00094			05/02/16 09:28	05/03/16 19:18	
Calcium		J	0.20	0.059	•		05/02/16 09:28	05/03/16 19:18	•
Chromium	0.14		0.010	0.0024	•		05/02/16 09:28	05/03/16 19:18	•
Cobalt	0.036		0.0050	0.00096			05/02/16 09:28	05/03/16 19:18	
Copper	0.0090		0.010	0.0022	-		05/02/16 09:28	05/03/16 19:18	•
lron	2.1		0.20		mg/L		05/02/16 09:28	05/03/16 19:18	,
Lead	0.076		0.0050	0.0024			05/02/16 09:28	05/03/16 19:18	
Magnesium	29		0.10	0.034	•		05/02/16 09:28	05/03/16 19:18	,
Manganese	0.0087		0.010	0.0034	_		05/02/16 09:28	05/03/16 19:18	,
Nickel	0.14		0.010	0.0031	-		05/02/16 09:28	05/03/16 19:18	
Potassium	610		0.50		mg/L			05/03/16 19:18	•
Selenium		JB UB	0.010	0.0046	-		05/02/16 09:28	05/03/16 19:18	,
Silver	<0.0050		0.0050	0.0013			05/02/16 09:28		1
Sodium	3300		100		mg/L			05/05/16 15:46	100
Thallium	<0.010		0.010	0.0028	-			05/03/16 19:18	1
Vanadium	0.054		0.0050	0.0019				05/03/16 19:18	
Zinc	0.12	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:18	1
Method: 7470A - Mercury						_	<u>.</u> .		 –
	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Analyte					ma/l				
Analyte Mercury	0.00020		0.00020	0.00011	IIIg/L		05/04/16 15:00	05/05/16 11:31	
	(CVAA) - Disso		0.00020	MDL		D	05/04/16 15:00 Prepared	05/05/16 11:31 Analyzed	Dil Fac

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3 Date Collected: 04/29/16 08:47 **Matrix: Water**

Date Received: 04/30/16 07:34

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	7.9	J	1.0	0.22	mg/L			05/03/16 05:44	1
Sulfate	21		10	4.0	mg/L			05/02/16 09:05	2
Total Organic Carbon - Duplicates	360		20	4.6	mg/L			05/13/16 22:58	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	17		5.0	1.6	mg/L			05/03/16 11:47	1
Ammonia	530	₽	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:12	200
Nitrogen, Nitrite	0.014	J	0.020	0.0032	mg/L			04/30/16 12:21	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:36	2

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-4

. Matrix: Water

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016 Date Collected: 04/29/16 10:47

Date Received: 04/30/16 07:34

Method: 8260B - Volatile Org Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	54		5.0		ug/L			05/12/16 20:06	
Benzene	10		0.50		ug/L			05/12/16 20:06	
Bromodichloromethane	<1.0		1.0		ug/L			05/12/16 20:06	
Bromoform	<1.0		1.0		ug/L			05/12/16 20:06	
Bromomethane	<2.0	UJ	2.0		ug/L			05/12/16 20:06	
Carbon disulfide	<2.0		2.0		ug/L			05/12/16 20:06	
Carbon tetrachloride	<1.0		1.0		ug/L			05/12/16 20:06	
Chlorobenzene	<1.0		1.0		ug/L			05/12/16 20:06	
Chloroethane	<1.0		1.0		ug/L			05/12/16 20:06	
Chloroform	<1.0		1.0		ug/L			05/12/16 20:06	
Chloromethane	<1.0				ug/L ug/L			05/12/16 20:06	
			1.0		_				
cis-1,2-Dichloroethene	8.5		1.0		ug/L			05/12/16 20:06	
cis-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 20:06	
Cyclohexane	<1.0		1.0		ug/L			05/12/16 20:06	,
Dibromochloromethane	<1.0		1.0		ug/L			05/12/16 20:06	
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0		ug/L			05/12/16 20:06	
1,2-Dibromoethane	<1.0		1.0		ug/L			05/12/16 20:06	
1,2-Dichlorobenzene	6.8		1.0		ug/L			05/12/16 20:06	
1,3-Dichlorobenzene	<1.0		1.0		ug/L			05/12/16 20:06	
1,4-Dichlorobenzene	17		1.0		ug/L			05/12/16 20:06	
Dichlorodifluoromethane	<2.0		2.0		ug/L			05/12/16 20:06	
1,1-Dichloroethane	<1.0		1.0		ug/L			05/12/16 20:06	
1,2-Dichloroethane	<1.0		1.0		ug/L			05/12/16 20:06	
1,1-Dichloroethene	<1.0		1.0		ug/L			05/12/16 20:06	
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 20:06	
Ethylbenzene	150		0.50	0.18	ug/L			05/12/16 20:06	
2-Hexanone	< 5.0	UJ	5.0	1.6	ug/L			05/12/16 20:06	
sopropylbenzene	9.6		1.0	0.39	ug/L			05/12/16 20:06	
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 20:06	
Methylcyclohexane	1.3		1.0	0.32	ug/L			05/12/16 20:06	
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 20:06	
Methyl Ethyl Ketone	16	J	5.0	2.1	ug/L			05/12/16 20:06	
methyl isobutyl ketone	63	J	5.0	2.2	ug/L			05/12/16 20:06	
Methyl tert-butyl ether	<1.0		1.0		ug/L			05/12/16 20:06	
Styrene	<1.0		1.0	0.39	-			05/12/16 20:06	
1,1,2,2-Tetrachloroethane	<1.0		1.0		ug/L			05/12/16 20:06	
Tetrachloroethene	<1.0		1.0		ug/L			05/12/16 20:06	
rans-1,2-Dichloroethene	<1.0		1.0		ug/L			05/12/16 20:06	
rans-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 20:06	
1,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/12/16 20:06	
1,1,1-Trichloroethane	<1.0		1.0		ug/L			05/12/16 20:06	
1,1,2-Trichloroethane	<1.0		1.0		ug/L ug/L			05/12/16 20:06	
Trichloroethene	<0.50		0.50		ug/L ug/L			05/12/16 20:06	
Trichloroethene	<1.0		1.0					05/12/16 20:06	
					ug/L				
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0		ug/L			05/12/16 20:06	
Vinyl chloride	13		0.50	0.20	ug/L			05/12/16 20:06	•
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	95		71 - 120			-	<u> </u>	05/12/16 20:06	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 10:47

Date Received: 04/30/16 07:34

Matrix: Water

ı	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
	Dibromofluoromethane	93		70 - 120		05/12/16 20:06	1	
	1,2-Dichloroethane-d4 (Surr)	92		71 - 127		05/12/16 20:06	1	
	Toluene-d8 (Surr)	102		75 - 120		05/12/16 20:06	1	

Method: 8260B - Volatile Org	ganic Compo	unds (GC/	MS) - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	410	D	2.5	0.76	ug/L			05/12/16 20:32	5
Xylenes, Total	760	D	5.0	1.1	ug/L			05/12/16 20:32	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4 Duamanthuanahanaana (Cum)	400		74 400			-		05/40/46 00:00	

4-Bromofluorobenzene (Surr)	100	71 - 120	05/12/16 20:32	5
Dibromofluoromethane	95	70 - 120	05/12/16 20:32	5
1,2-Dichloroethane-d4 (Surr)	95	71 - 127	05/12/16 20:32	5
Toluene-d8 (Surr)	102	75 - 120	05/12/16 20:32	5

l	Method: 8	3270D -	Semivolatile	Organic	Compounds	(GC/MS)

Analyte	•	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Anthracene	2.8	JD	8.4	2.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-ethylhexyl) phthalate	290	D	84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Bromophenyl phenyl ether	<42		42	4.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Butyl benzyl phthalate	<17		17	4.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Carbazole	4.8	JD	42	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloroaniline	<84	₩ UJ	84	17	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chlorophenyl phenyl ether	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Chrysene	<4.2		4.2	0.57	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dimethylphenol	470	≯ JD	84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Di-n-butyl phthalate	<42		42	6.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/13/16 09:54	10

TestAmerica Chicago

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47 **Matrix: Water** Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<84		84	8.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluoranthene	8.8	D	8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluorene	3.2	JD	8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachloroethane	<42		42	5.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 09:54	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylnaphthalene	9.4	D	4.2	0.55	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylphenol	78	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
3 & 4 Methylphenol	280	D	17	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Naphthalene	48	D	8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 09:54	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenanthrene	14	D	8.4	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenol	<42		42	5.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pyrene	8.0	JD	8.4	3.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzaldehyde	~<170	 R	- 170	130	ug/L		05/05/16 08:14	05/13/16 09:54	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 09:54	10
Atrazine	<42		42		ug/L		05/05/16 08:14	05/13/16 09:54	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		30 - 123				05/05/16 08:14	05/13/16 09:54	10
2-Fluorophenol (Surr)	64		30 - 110				05/05/16 08:14	05/13/16 09:54	10
Nitrobenzene-d5 (Surr)	87		33 - 139				05/05/16 08:14	05/13/16 09:54	10
Phenol-d5 (Surr)	63		20 - 100				05/05/16 08:14	05/13/16 09:54	10
Terphenyl-d14 (Surr)	91		42 - 150				05/05/16 08:14	05/13/16 09:54	10
2,4,6-Tribromophenol (Surr)	101		30 - 150				05/05/16 08:14	05/13/16 09:54	10

Method: 8081B - Organo	chlorine Pesticides (GC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041 R	0.041	0.0055	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-BHC	< <mark>0</mark> .041	0.041	0 0027	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-Chlordane	<0.041	0.041	0.0045	ug/L		05/02/16 16:20	05/03/16 16:33	1
beta-BHC	<0.041	0.041	0.010	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDD	<0.0 <mark>4</mark> 1	0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDE	<0.041	0.041	0.0039	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDT	<0.041	0.041	0.003	ug/L		05/02/16 16:20	05/03/16 16:33	1

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

DCB Decachlorobiphenyl

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47 **Matrix: Water** Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	< 0 041	R	0.041	Ø.011	ug/L		05/02/16 16:20	05/03/16 16:33	1
Dieldrin	<0 <mark>.</mark> 041	1	0 <mark>.041</mark>	0.013	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan I	<0. <mark>041</mark>		0.041	0.0042	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan II	<0. <mark>0</mark> 41		0.041	0.0029	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan sulfate	<0.041		0. <mark>041</mark>	0.012	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin	<0.041		0.041	0.015	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin aldehyde	<0.041		0. <mark>0</mark> 41	0.0084	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin ketone	<0.041		0.041	0.017	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-BHC (Lindane)	<0.041		0.041	0.0058	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-Chlordane	<0.0 <mark>4</mark> 1		0.041	0.0074	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor	<0.041		0.041	0.04	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
Methoxychlor	<0.082	/	0.082	0.024	ug/L		05/02/16 16:20	05/03/16 16:33	1
Toxaphene	<0. <mark>4</mark> 1	V	0.41	0.21	ug/L		05/02/16 16:20	05/03/16 16:33	1
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	9	X	30 - 143				05/02/16 16:20	05/03/16 16:33	1
BOB BOOGOMOTOSIPHOTIST									
Tetrachloro-m-xylene Method: 8082A - Polych		, ,		_		D	05/02/16 16:20		Dil Ess
Tetrachloro-m-xylene Method: 8082A - Polych Analyte	lorinated Bipheny Result	/Is (PCBs) Qualifier	by Gas Chr	MDL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: 8082A - Polych Analyte PCB-1016	lorinated Bipheny Result <0.41	, ,	by Gas Chro	MDL 0.069	Unit ug/L	<u>D</u>	Prepared 05/02/16 16:20	Analyzed 05/03/16 17:52	Dil Fac
Method: 8082A - Polych Analyte PCB-1016 PCB-1016	lorinated Bipheny Result <0.41	Qualifier	by Gas Chronic RL 0.41 0.41	0.069 0.069	Unit ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52	Dil Fac
Method: 8082A - Polych Analyte PCB-1016 PCB-1221	Result	Qualifier	by Gas Chro RL 0.41 0.41 0.41	0.069 0.069 0.21	Unit ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221	Result	Qualifier	by Gas Chro RL 0.41 0.41 0.41 0.41	0.069 0.069 0.21	Unit ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232	Result	Qualifier	by Gas Chro RL 0.41 0.41 0.41 0.41 0.41	0.069 0.069 0.21 0.21 0.21	ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232	Result	Qualifier	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41	0.069 0.069 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242	Result <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.	Qualifier	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	0.069 0.069 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1242	Result	Qualifier	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	0.069 0.069 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1242 PCB-1248	Result	Qualifier	0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1222 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248	Result	Qualifier	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	MDL 0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCB-1248	Result <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.	Qualifier UJ	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	MDL 0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1244 PCB-1248 PCB-1248 PCB-1254	Result <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.	Qualifier UJ J	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.4	0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L	D	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1016 PCB-1221 PCB-1222 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCB-1254 PCB-1254 PCB-1254	Result <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.41 <0.	Qualifier UJ	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41	MDL 0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCB-1248	Result	Qualifier UJ J UJ UJ UJ	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.4	0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1016 PCB-1221 PCB-1222 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCB-1254 PCB-1254 PCB-1260 PCB-1260	Result	Qualifier UJ J UJ UJ UJ Qualifier	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.4	0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Method: 8082A - Polych Analyte PCB-1016 PCB-1016 PCB-1221 PCB-1222 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCB-1254 PCB-1254 PCB-1250 PCB-1260 PCB-1260	Result	Qualifier UJ J UJ UJ UJ UJ Qualifier X	by Gas Chronic RL 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.4	0.069 0.069 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21	Unit ug/L ug/L	<u>D</u>	Prepared 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	Analyzed 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52 05/03/16 17:52	Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Method: 8082A - Polychlorina	ted Biphenyls (PCBs) b	y Gas Chro	matography - R	E	
Analyte	Result Qualifier	RL	MDL Unit	D Prepared Analyzed	Dil Fac
PCB-1016	<0.41 *	0.41	0.069 ug/L	05/04/16 16:40 05/12/16 11:03	1
PCB-1016	<0.41	0.41	0.069 ug/L	05/04/16 16:40 05/12/16 11:03	1
PCB-1221	<0.41	0.41	0.21 ug/L	05/04/16 16:40 05/12/16 11:03	1
PCB-1221		0.41	0.21 ug/L	05/ 94/16 16:40 05/12/16 11:03	1
PCB-1232	<0.41	0.41	0.21 ug/L	05/04/16 16:40 05/12/16 11:03	1
PCB-1232	<0.41	0.41	0.21 ug/L	05/04/16 16:40 05/12/16 11:03	1

30 - 150

13 X

05/02/16 16:20 05/03/16 17:52

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sar	nple ID: MW-7	7-GW-04292016
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Date Collected: 04/29/16 10:47 **Matrix: Water**

Date	Received:	04/30/16	07:34

Method: 8082A - Polych Analyte		yls (PCBs) Qualifier	by Gas Chi	romatogr MDL		- RE (Co	ntinued) Prepared	Analyzed	Dil Fa
PCB-1242	<0.41	Qualifier	0.41	0.21	ug/L		05/04/16 16:40	•	0
PCB-1242	<0.41		0.41	0.21				05/12/16 11:03	
PCB-1248	<0.41		0.41	0.21	•			05/12/16 11:03	
PCB-1248	<0.41		0.41	0.21			05/04/16 16:40		
PCB-1254	1.1		0.41		ug/L ug/L			05/12/16 11:03	
PCB-1254	1.3		0.41	0.21	-			05/12/16 11:03	
PCB-1260	<0.41	*	0.41	0.073	_			05/12/16 11:03	
PCB-1260	<0.41		0.41	0.073				05/12/16 11:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	6		30 - 127					05/12/16 11:03	
Tetrachloro-m-xylene		X	30 - 127				05/04/16 16:40	_	
DCB Decachlerobiphenyl		X	30 - 150					05/12/16 11:03	
DCB Decachlorobiphenyl		X	30 - 150					05/12/16 11:03	
Method: 6010C - Metals	(ICP)								
Analyte	· /	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	1.9		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:23	
Antimony	0.015	J	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:23	
Arsenic	0.048		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:23	
Barium	0.54		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:23	
Beryllium	0.0011	J	0.0040	0.00085	_		05/02/16 09:28	05/03/16 19:23	
Cadmium	0.0080		0.0020	0.00094	•		05/02/16 09:28	05/03/16 19:23	
Calcium	11	J	0.20	0.059	•		05/02/16 09:28	05/03/16 19:23	
Chromium	0.48	J	0.010	0.0024	_		05/02/16 09:28	05/03/16 19:23	
Cobalt	0.044		0.0050	0.00096	-		05/02/16 09:28	05/03/16 19:23	
Copper	0.082		0.010	0.0022	•		05/02/16 09:28	05/03/16 19:23	
Iron	4.7	A.	0.20		mg/L		05/02/16 09:28	05/03/16 19:23	
Lead	0.68	Ü	0.0050	0.0024	•			05/03/16 19:23	
Magnesium	22		0.10	0.034				05/03/16 19:23	
Manganese	0.017		0.010	0.0034	-			05/03/16 19:23	
Nickel	0.16		0.010	0.0031	U			05/03/16 19:23	
Potassium	670		0.50		mg/L			05/03/16 19:23	
Selenium	< 0.010 0.0091	- LE LID	0.010	0.0046	-			05/03/16 19:23	
Silver	0.0026	OB	0.0050	0.0013	U			05/03/16 19:23	
Sodium	3600		100		mg/L			05/05/16 15:51	10
Thallium	<0.010		0.010	0.0028	_			05/03/16 19:23	10
Vanadium	0.078		0.010	0.0020	-			05/03/16 19:23	
Zinc	0.078		0.020	0.0019				05/03/16 19:23	
Method: 6010C - Metals ^{Analyte}		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Aluminum	1.4		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:28	
Antimony	0.011	J	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:28	
Arsenic	0.040		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	
Barium	0.47		0.010	0.0022				05/03/16 19:28	
Beryllium	0.00085	J	0.0040	0.00085	_			05/03/16 19:28	
Cadmium	0.0057	-	0.0020	0.00094	_			05/03/16 19:28	
Calcium	10		0.20	0.059				05/03/16 19:28	
	10	U	0.20	0.000	⊎, ⊏		- 5. 5-7 1 5 5 5 . 2 6	55.55, 15 10.20	

Lab Sample ID: 500-110948-4

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 10:47

Date Received: 04/30/16 07:34

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.041		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:28	
Copper	0.052		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:28	
Iron	4.1	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:28	
Lead	0.39	J	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:28	
Magnesium	21		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:28	•
Manganese	0.014		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:28	
Nickel	0.15		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	
Potassium	620		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:28	
Selenium	< 0.010 0.0091	JB UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:28	•
Silver	0.0016	J	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:28	•
Sodium	3400		100	43	mg/L		05/02/16 09:28	05/05/16 15:55	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:28	
Vanadium	0.068		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:28	•
Zinc	0.67	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:28	
Analyte Mercury	0.0010	hrad	0.00020	0.00011	mg/L		05/04/16 15:00	Analyzed 05/05/16 11:35	
Method: 7470A - Mercury (CAnalyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00063		0.00020	0.00011		=	05/04/16 15:00	05/05/16 11:37	
General Chemistry									
General Chemistry Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Analyte Sulfide	8.8	Qualifier	1.0	0.22	mg/L	<u>D</u>	Prepared	05/03/16 05:47	
Analyte		Qualifier	1.0 100	0.22 40	mg/L mg/L	D	Prepared		20
Analyte Sulfide Sulfate Total Organic Carbon - Duplicat	8.8 240 es 480	Qualifier	1.0 100 20	0.22 40 4.6	mg/L mg/L mg/L	<u>D</u>	Prepared	05/03/16 05:47 05/05/16 07:46 05/13/16 23:18	
Analyte Sulfide Sulfate Total Organic Carbon - Duplicat Nitrogen, Nitrate	8.8 240 es 480 <0.10	Qualifier	1.0 100 20 0.10	0.22 40 4.6 0.045	mg/L mg/L mg/L mg/L	<u>D</u>	Prepared	05/03/16 05:47 05/05/16 07:46 05/13/16 23:18 05/13/16 15:09	2
Analyte Sulfide Sulfate Total Organic Carbon - Duplicat Nitrogen, Nitrate	8.8 240 es 480	Qualifier	1.0 100 20 0.10 5.0	0.22 40 4.6 0.045 1.6	mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared	05/03/16 05:47 05/05/16 07:46 05/13/16 23:18	21
Analyte Sulfide Sulfate Total Organic Carbon - Duplicat Nitrogen, Nitrate Total Suspended Solids	8.8 240 es 480 <0.10		1.0 100 20 0.10	0.22 40 4.6 0.045 1.6 8.6	mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared 05/11/16 18:12	05/03/16 05:47 05/05/16 07:46 05/13/16 23:18 05/13/16 15:09 05/03/16 11:48	2
Analyte Sulfide Sulfate Total Organic Carbon - Duplicat	8.8 240 es 480 <0.10		1.0 100 20 0.10 5.0	0.22 40 4.6 0.045 1.6	mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>		05/03/16 05:47 05/05/16 07:46 05/13/16 23:18 05/13/16 15:09 05/03/16 11:48	21

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-5

Matrix: Water

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Date Collected: 04/29/16 12:27 Date Received: 04/30/16 07:34

Method: 8260B - Volatile Orga Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	6.8	Qualifier	5.0		ug/L		Frepareu	05/12/16 21:00	Dil Fa
Benzene	1.6		0.50		ug/L			05/12/16 21:00	
Bromodichloromethane	<1.0		1.0		ug/L			05/12/16 21:00	
Bromoform	<1.0		1.0		ug/L			05/12/16 21:00	
Bromomethane	<2.0	UJ	2.0		ug/L			05/12/16 21:00	
Carbon disulfide	<2.0		2.0		ug/L			05/12/16 21:00	
Carbon tetrachloride	<1.0		1.0		ug/L			05/12/16 21:00	
Chlorobenzene	15		1.0		ug/L			05/12/16 21:00	
Chloroethane	<1.0		1.0		ug/L			05/12/16 21:00	
Chloroform	<1.0		1.0		ug/L			05/12/16 21:00	
Chloromethane	<1.0		1.0		ug/L			05/12/16 21:00	
cis-1,2-Dichloroethene	<1.0		1.0		ug/L			05/12/16 21:00	
cis-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 21:00	
Cyclohexane	1.5		1.0		ug/L			05/12/16 21:00	
Dibromochloromethane	<1.0		1.0		ug/L ug/L			05/12/16 21:00	
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			05/12/16 21:00	
1,2-Dibromoethane	<1.0	UJ	1.0		ug/L ug/L			05/12/16 21:00	
1,2-Dichlorobenzene	<1.0		1.0		ug/L ug/L			05/12/16 21:00	
1,3-Dichlorobenzene	<1.0		1.0		ug/L ug/L			05/12/16 21:00	
					ug/L ug/L			05/12/16 21:00	
1,4-Dichlorobenzene Dichlorodifluoromethane	1.7 <2.0		1.0 2.0		ug/L ug/L			05/12/16 21:00	
					-			05/12/16 21:00	
1,1-Dichloroethane	<1.0 <1.0		1.0		ug/L ug/L			05/12/16 21:00	
1,2-Dichloroethane	<1.0		1.0		_				
1,1-Dichloroethene			1.0		ug/L			05/12/16 21:00	
1,2-Dichloropropane	<1.0		1.0		ug/L			05/12/16 21:00	
Ethylbenzene	< 0.50		0.50		ug/L			05/12/16 21:00	
2-Hexanone		UJ	5.0		ug/L			05/12/16 21:00	
sopropylbenzene	3.5		1.0		ug/L			05/12/16 21:00	
Methyl acetate	<5.0		5.0		ug/L			05/12/16 21:00	
Methylcyclohexane	1.3		1.0		ug/L			05/12/16 21:00	
Methylene Chloride	< 5.0		5.0		ug/L			05/12/16 21:00	
Methyl Ethyl Ketone	< 5.0	UJ	5.0		ug/L			05/12/16 21:00	
methyl isobutyl ketone	<5.0	UJ	5.0		ug/L			05/12/16 21:00	
Methyl tert-butyl ether	<1.0		1.0		ug/L			05/12/16 21:00	
Styrene	<1.0		1.0		ug/L			05/12/16 21:00	
1,1,2,2-Tetrachloroethane	<1.0		1.0		ug/L			05/12/16 21:00	
Tetrachloroethene	<1.0		1.0		ug/L			05/12/16 21:00	
Toluene	0.37	J	0.50		ug/L			05/12/16 21:00	
trans-1,2-Dichloroethene	<1.0		1.0		ug/L			05/12/16 21:00	
rans-1,3-Dichloropropene	<1.0		1.0		ug/L			05/12/16 21:00	
1,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/12/16 21:00	
1,1,1-Trichloroethane	<1.0		1.0		ug/L			05/12/16 21:00	
1,1,2-Trichloroethane	<1.0		1.0		ug/L			05/12/16 21:00	
Trichloroethene	<0.50		0.50		ug/L			05/12/16 21:00	
Trichlorofluoromethane	<1.0		1.0		ug/L			05/12/16 21:00	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0		ug/L			05/12/16 21:00	
Vinyl chloride	<0.50		0.50		ug/L			05/12/16 21:00	
Xylenes, Total	0.93	J	1.0	0.22	ug/L			05/12/16 21:00	

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5 Date Collected: 04/29/16 12:27 **Matrix: Water** Date Received: 04/30/16 07:34

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102	71 - 120		05/12/16 21:00	1
Dibromofluoromethane	94	70 - 120		05/12/16 21:00	1
1,2-Dichloroethane-d4 (Surr)	94	71 - 127		05/12/16 21:00	1
Toluene-d8 (Surr)	102	75 - 120		05/12/16 21:00	1

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.97	0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acenaphthylene	<0.85	0.85	0.23	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acetophenone	<4.2	4.2	0.56	ug/L		05/05/16 08:14	05/14/16 02:12	1
Anthracene	<0.85	0.85	0.28	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]anthracene	<0.17	0.17	0.048	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]pyrene	<0.17	0.17	0.084	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[b]fluoranthene	<0.17	0.17	0.068	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[g,h,i]perylene	<0.85	0.85	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[k]fluoranthene	<0.17	0.17	0.054	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethoxy)methane	<1.7	1.7	0.24	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethyl)ether	<1.7	1.7	0.25	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-ethylhexyl) phthalate	<8.5	8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Bromophenyl phenyl ether	<4.2	4.2	0.46	ug/L		05/05/16 08:14	05/14/16 02:12	1
Butyl benzyl phthalate	<1.7	1.7	0.41	ug/L		05/05/16 08:14	05/14/16 02:12	1
Carbazole	<4.2	4.2	0.30	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloroaniline	<8.5 / UJ	8.5	1.7	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloro-3-methylphenol	<8.5	8.5	2.0	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chloronaphthalene	<1.7	1.7		ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chlorophenol	<4.2	4.2		ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chlorophenyl phenyl ether	<4.2	4.2		ug/L		05/05/16 08:14	05/14/16 02:12	1
Chrysene	<0.42	0.42	0.058	_		05/05/16 08:14	05/14/16 02:12	1
Dibenz(a,h)anthracene	<0.25	0.25	0.043	-		05/05/16 08:14	05/14/16 02:12	1
Dibenzofuran	<1.7	1.7		ug/L		05/05/16 08:14	05/14/16 02:12	1
3,3'-Dichlorobenzidine	<4.2	4.2		ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dichlorophenol	<8.5	8.5		ug/L		05/05/16 08:14	05/14/16 02:12	1
Diethyl phthalate	<1.7	1.7		ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dimethylphenol	<8.5 ≠ UJ	8.5		ug/L		05/05/16 08:14	05/14/16 02:12	1
Dimethyl phthalate	<1.7	1.7		ug/L		05/05/16 08:14	05/14/16 02:12	1
Di-n-butyl phthalate	<4.2	4.2		ug/L		05/05/16 08:14	05/14/16 02:12	1
4,6-Dinitro-2-methylphenol	<17	17		ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrophenol	<17	17		ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrotoluene	<0.85	0.85	0.21	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,6-Dinitrotoluene	<0.42	0.42	0.063	_			05/14/16 02:12	1
Di-n-octyl phthalate	<8.5	8.5		ug/L		05/05/16 08:14	05/14/16 02:12	1
Fluoranthene	<0.85	0.85	0.39	-		05/05/16 08:14	05/14/16 02:12	1
Fluorene	0.46 J	0.85		ug/L			05/14/16 02:12	1
Hexachlorobenzene	<0.42	0.42	0.067				05/14/16 02:12	1
Hexachlorobutadiene	<4.2	4.2		ug/L			05/14/16 02:12	1
Hexachlorocyclopentadiene	<17	17		ug/L			05/14/16 02:12	1
Hexachloroethane	<4.2	4.2		ug/L			05/14/16 02:12	
Indeno[1,2,3-cd]pyrene	<0.17	0.17	0.063				05/14/16 02:12	1
Isophorone	<1.7	1.7		ug/L			05/14/16 02:12	1
2-Methylnaphthalene	2.6	0.42	0.055				05/14/16 02:12	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

gamma-Chlordane

Date Collected: 04/29/16 12:27

Matrix: Water

Method: 8270D - Semivola Analyte		mpounds Qualifier	(GC/MS) (Co) Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7		1.7	0.26	ug/L		05/05/16 08:14		1
3 & 4 Methylphenol	4.5		1.7		ug/L		05/05/16 08:14	05/14/16 02:12	1
Naphthalene	0.36		0.85		ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Nitroaniline	<4.2		4.2		ug/L			05/14/16 02:12	1
3-Nitroaniline	<8.5		8.5		ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Nitroaniline	<8.5		8.5		ug/L			05/14/16 02:12	1
Nitrobenzene	<0.85		0.85		ug/L			05/14/16 02:12	1
2-Nitrophenol	<8.5		8.5		ug/L			05/14/16 02:12	1
4-Nitrophenol	<17		17		ug/L			05/14/16 02:12	1
N-Nitrosodi-n-propylamine	<0.42		0.42		ug/L			05/14/16 02:12	1
N-Nitrosodiphenylamine	<0.85		0.85		ug/L			05/14/16 02:12	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7		ug/L			05/14/16 02:12	1
Pentachlorophenol	<17		17		ug/L			05/14/16 02:12	1
Phenanthrene	0.48	J	0.85		ug/L			05/14/16 02:12	1
Phenol	<4.2		4.2		ug/L			05/14/16 02:12	
Pyrene	<0.85		0.85		ug/L			05/14/16 02:12	1
2,4,5-Trichlorophenol	<8.5		8.5		ug/L			05/14/16 02:12	1
2,4,6-Trichlorophenol	<4.2		4.2		ug/L			05/14/16 02:12	
Benzaldehyde	<17	1	17		ug/L			05/14/16 02:12	1
Caprolactam	<8.5	^ UJ	8.5		ug/L			05/14/16 02:12	1
Atrazine	<4.2		4.2		ug/L			05/14/16 02:12	
1,1'-Biphenyl	<4.2		4.2		ug/L			05/14/16 02:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	61		30 - 123				05/05/16 08:14	05/14/16 02:12	1
2-Fluorophenol (Surr)	55		30 - 110				05/05/16 08:14	05/14/16 02:12	1
Nitrobenzene-d5 (Surr)	58		33 - 139				05/05/16 08:14	05/14/16 02:12	1
Phenol-d5 (Surr)	45		20 - 100				05/05/16 08:14	05/14/16 02:12	1
Terphenyl-d14 (Surr)	91		42 - 150				05/05/16 08:14	05/14/16 02:12	1
2,4,6-Tribromophenol (Surr)	88		30 - 150				05/05/16 08:14	05/14/16 02:12	1
Method: 8081B - Organoch						_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0057	-		05/02/16 16:20		1
alpha-BHC	<0.043		0.043	0.0028	•			05/03/16 16:52	1
alpha-Chlordane	<0.043		0.043	0.0047				05/03/16 16:52	
beta-BHC	<0.043		0.043	0.011	_			05/03/16 16:52	1
4,4'-DDD	<0.043		0.043	0.014	_			05/03/16 16:52	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L			05/03/16 16:52	1
4,4'-DDT	<0.043		0.043	0.0034	ug/L		05/02/16 16:20	05/03/16 16:52	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:52	1
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan I	<0.043		0.043	0.0044	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
			0.043	0 0000	ua/l		05/02/16 16:20	05/03/16 16:52	1
Endrin aldehyde	< 0.043		0.043	0.0088	ug/L		03/02/10 10.20	03/03/10 10.32	'
•	<0.043 <0.043		0.043	0.0088	_			05/03/16 16:52	1
Endrin aldehyde Endrin ketone gamma-BHC (Lindane)					ug/L		05/02/16 16:20		

05/02/16 16:20 05/03/16 16:52

0.043

< 0.043

0.0078 ug/L

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-9-GW-04292016	Lab Sample ID: 500-110948-5
------------------------------------	-----------------------------

Date Collected: 04/29/16 12:27

Date Received: 04/30/16 07:34

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.043		0.043	0.015			05/02/16 16:20	05/03/16 16:52	
leptachlor epoxide	<0.043		0.043	0.015			05/02/16 16:20	05/03/16 16:52	
Methoxychlor	<0.086		0.046	0.025	_		05/02/16 16:20	05/03/16 16:52	
oxaphene	<0.43		0.43		ug/L			05/03/16 16:52	1
охарнене	40.40		0.40	0.22	ug/L		00/02/10 10:20	00/00/10 10:02	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
OCB Decachlorobiphenyl	55		30 - 143				05/02/16 16:20	05/03/16 16:52	1
etrachloro-m-xylene	69		30 - 120				05/02/16 16:20	05/03/16 16:52	1
lethod: 8082A - Polychlorina	ted Biphen	/Is (PCBs)	by Gas Chi	omatogr	aphv				
inalyte		Qualifier	RL	_	Unit	D	Prepared	Analyzed	Dil Fac
CB-1016	<0.43	· 	0.43	0.072	ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1221	< 0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1232	< 0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1242	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1248	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1254	< 0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:08	1
CB-1260	<0.43		0.43	0.075				05/03/16 18:08	1
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
etrachloro-m-xylene	65		30 - 127				05/02/16 16:20	05/03/16 18:08	
CB Decachlorobiphenyl	62		30 - 150				05/02/16 16:20	05/03/16 18:08	1
lethod: 6010C - Metals (ICP)									
analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
luminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:34	1
ntimony	< 0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:34	1
rsenic	< 0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:34	1
arium	0.79		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
eryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:34	
admium	0.0011	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:34	1
alcium	130	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:34	1
hromium	0.0028	J	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:34	1
obalt	< 0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:34	1
opper	< 0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
on	27	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:34	1
ead	< 0.0050		0.0050	0.0024	mg/L			05/03/16 19:34	1
agnesium	88		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:34	1
anganese	0.19		0.010	0.0034	_		05/02/16 09:28	05/03/16 19:34	1
ickel	0.0041	J	0.010	0.0031	_			05/03/16 19:34	1
otassium	79		0.50		mg/L			05/03/16 19:34	
elenium	<0.010		0.010	0.0046			05/02/16 09:28		1
ilver	<0.0050		0.0050	0.0013	_			05/03/16 19:34	1
odium	200		1.0		mg/L			05/03/16 19:34	
hallium	<0.010		0.010	0.0028	_			05/03/16 19:34	
anadium	<0.0050		0.0050	0.0019	_			05/03/16 19:34	
inc	<0.020		0.020	0.0090	-			05/03/16 19:34	,
Method: 6010C - Metals (ICP)	. Dissolved								
nalyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	<0.20		0.20	0.062			05/02/16 09:28	05/03/16 19:46	1

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Date Collected: 04/29/16 12:27 Matrix: Water Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) - Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:46	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Barium	0.83		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cadmium	0.0016	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:46	1
Calcium	130	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:46	1
Chromium	0.0033	J	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cobalt	< 0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:46	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Iron	28	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:46	1
Lead	< 0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Magnesium	91		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Manganese	0.19		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Nickel	0.0044	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Potassium	81		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:46	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:46	1
Silver	< 0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:46	1
Sodium	210		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:46	1
Thallium	< 0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:46	1
Vanadium	< 0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:46	1
Zinc	<0.020	UJ	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:46	1
Method: 7470A - Mercury (CVA	AA)								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:39	1
Method: 7470A - Mercury (CVA	,								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:45	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	1.1		1.0		mg/L			05/03/16 05:50	1
Sulfate	<5.0		5.0		mg/L			05/06/16 09:21	1
Total Organic Carbon - Duplicates	25		1.0		mg/L			05/13/16 23:39	
Nitrogen, Nitrate	<0.10		0.10	0.045	•			05/13/16 15:09	1
Total Suspended Solids	52	_,	5.0		mg/L			05/03/16 11:50	1
Ammonia	79	F	5.0		mg/L		05/11/16 18:12	05/12/16 19:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0032	-			04/30/16 12:22	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:40	1

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-6

Matrix: Water

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Date Collected: 04/29/16 14:02 Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organ			MDL	11:4	_	Duamanad	A sa a la sera el	Dil For
Analyte	Result Qualifier	RL 5.0		ug/L	D	Prepared	Analyzed 05/12/16 21:26	Dil Fac
Acetone Benzene	6.2 <0.50	0.50		_			05/12/16 21:26	
	<1.0	1.0	0.15	_				1
Bromodichloromethane			0.37				05/12/16 21:26	
Bromoform	<1.0 UJ	1.0	0.48	-			05/12/16 21:26	1
Bromomethane	<2.0 F2 UJ	2.0	0.80	_			05/12/16 21:26	1
Carbon disulfide	<2.0	2.0	0.45	•			05/12/16 21:26	1
Carbon tetrachloride	<1.0	1.0	0.38				05/12/16 21:26	1
Chlorobenzene	<1.0	1.0	0.39	-			05/12/16 21:26	1
Chloroethane	<1.0 -F2 UJ	1.0	0.51	-			05/12/16 21:26	
Chloroform	<1.0	1.0	0.37				05/12/16 21:26	1
Chloromethane	<1.0 -F2- UJ	1.0	0.32	_			05/12/16 21:26	1
cis-1,2-Dichloroethene	<1.0	1.0	0.41	-			05/12/16 21:26	1
cis-1,3-Dichloropropene	<1.0	1.0	0.42				05/12/16 21:26	1
Cyclohexane	<1.0	1.0	0.49	-			05/12/16 21:26	1
Dibromochloromethane	<1.0	1.0	0.49	-			05/12/16 21:26	1
1,2-Dibromo-3-Chloropropane	<5.0 UJ	5.0		ug/L			05/12/16 21:26	1
1,2-Dibromoethane	<1.0	1.0	0.39	-			05/12/16 21:26	1
1,2-Dichlorobenzene	<1.0	1.0	0.33	-			05/12/16 21:26	1
1,3-Dichlorobenzene	<1.0	1.0	0.40	ug/L			05/12/16 21:26	1
1,4-Dichlorobenzene	<1.0	1.0	0.36	ug/L			05/12/16 21:26	1
Dichlorodifluoromethane	<2.0 <u>E2</u> UJ	2.0	0.67	ug/L			05/12/16 21:26	1
1,1-Dichloroethane	<1.0	1.0	0.41	ug/L			05/12/16 21:26	1
1,2-Dichloroethane	<1.0	1.0	0.39	ug/L			05/12/16 21:26	1
1,1-Dichloroethene	<1.0	1.0	0.39	ug/L			05/12/16 21:26	1
1,2-Dichloropropane	<1.0	1.0	0.43	ug/L			05/12/16 21:26	1
Ethylbenzene	0.33 J	0.50	0.18	-			05/12/16 21:26	1
2-Hexanone	<5.0 UJ	5.0		ug/L			05/12/16 21:26	1
Isopropylbenzene	<1.0	1.0	0.39	-			05/12/16 21:26	1
Methyl acetate	<5.0	5.0		ug/L			05/12/16 21:26	1
Methylcyclohexane	<1.0	1.0	0.32	_			05/12/16 21:26	1
Methylene Chloride	<5.0	5.0		ug/L			05/12/16 21:26	1
Methyl Ethyl Ketone	<5.0 - F2 UJ	5.0		ug/L			05/12/16 21:26	1
methyl isobutyl ketone	<5.0 - F2 - UJ	5.0		ug/L			05/12/16 21:26	1
Methyl tert-butyl ether	<1.0	1.0	0.39				05/12/16 21:26	
Styrene	<1.0	1.0	0.39				05/12/16 21:26	1
1,1,2,2-Tetrachloroethane	<1.0	1.0	0.40	•			05/12/16 21:26	
Tetrachloroethene	<1.0	1.0	0.37				05/12/16 21:26	· · · · · · · · · · · · · · · · · · ·
Toluene	<0.50	0.50	0.15				05/12/16 21:26	1
	<1.0	1.0					05/12/16 21:26	1
trans-1,2-Dichloroethene	<1.0	1.0	0.35				05/12/16 21:26	ا
trans-1,3-Dichloropropene	<1.0		0.36					1
1,2,4-Trichlorobenzene		1.0	0.34	_			05/12/16 21:26	1
1,1,1-Trichloroethane	<1.0	1.0	0.38				05/12/16 21:26	1
1,1,2-Trichloroethane	<1.0	1.0	0.35				05/12/16 21:26	1
Trichloroethene	<0.50	0.50	0.16				05/12/16 21:26	1
Trichlorofluoromethane	<1.0 F2 UJ	1.0	0.43				05/12/16 21:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	1.0	0.46				05/12/16 21:26	1
Vinyl chloride	<0.50 F2 UJ	0.50	0.20	ug/L			05/12/16 21:26	1

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-8-GW-04292016

Date Collected: 04/29/16 14:02 Date Received: 04/30/16 07:34 Lab Sample ID: 500-110948-6

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		71 - 120	05/12/16 21:26	1
Dibromofluoromethane	98		70 - 120	05/12/16 21:26	1
1,2-Dichloroethane-d4 (Surr)	96		71 - 127	05/12/16 21:26	1
Toluene-d8 (Surr)	102		75 - 120	05/12/16 21:26	1

Analyte	Result Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.85	0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acenaphthylene	<0.85	0.85	0.23	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acetophenone	<4.3	4.3	0.56	ug/L		05/05/16 08:14	05/13/16 03:06	1
Anthracene	<0.85	0.85	0.28	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]anthracene	<0.17	0.17	0.048	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]pyrene	<0.17	0.17	0.084	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[b]fluoranthene	<0.17	0.17	0.069	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[g,h,i]perylene	<0.85	0.85	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[k]fluoranthene	<0.17	0.17	0.054	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethoxy)methane	<1.7	1.7	0.24	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethyl)ether	<1.7	1.7	0.25	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-ethylhexyl) phthalate	<8.5	8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Bromophenyl phenyl ether	<4.3	4.3	0.46	ug/L		05/05/16 08:14	05/13/16 03:06	1
Butyl benzyl phthalate	<1.7	1.7	0.41	ug/L		05/05/16 08:14	05/13/16 03:06	1
Carbazole	<4.3	4.3	0.30	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloroaniline	<8.5 🖊 UJ	8.5	1.7	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloro-3-methylphenol	<8.5	8.5	2.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chloronaphthalene	<1.7	1.7	0.20	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chlorophenol	<4.3	4.3	0.48	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chlorophenyl phenyl ether	<4.3	4.3	0.54	ug/L		05/05/16 08:14	05/13/16 03:06	1
Chrysene	<0.43	0.43	0.058	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenz(a,h)anthracene	<0.26	0.26	0.043	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenzofuran	<1.7	1.7	0.22	ug/L		05/05/16 08:14	05/13/16 03:06	1
3,3'-Dichlorobenzidine	<4.3	4.3	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dichlorophenol	<8.5	8.5	2.2	ug/L		05/05/16 08:14	05/13/16 03:06	1
Diethyl phthalate	<1.7	1.7	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dimethylphenol	<8.5 凗 UJ	8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dimethyl phthalate	<1.7	1.7	0.27	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-butyl phthalate	<4.3	4.3	0.62	ug/L		05/05/16 08:14	05/13/16 03:06	1
4,6-Dinitro-2-methylphenol	<17	17	5.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrophenol	<17	17	7.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrotoluene	<0.85	0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,6-Dinitrotoluene	<0.43	0.43	0.063	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-octyl phthalate	<8.5	8.5	0.89	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluoranthene	<0.85	0.85	0.39	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluorene	<0.85	0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorobenzene	<0.43	0.43	0.067			05/05/16 08:14	05/13/16 03:06	1
Hexachlorobutadiene	<4.3	4.3		ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorocyclopentadiene	<17	17		ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachloroethane	<4.3	4.3		ug/L			05/13/16 03:06	1
Indeno[1,2,3-cd]pyrene	<0.17	0.17	0.064				05/13/16 03:06	1
Isophorone	<1.7	1.7		ug/L			05/13/16 03:06	1
2-Methylnaphthalene	0.14 J	0.43	0.055	-			05/13/16 03:06	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

gamma-Chlordane

Date Collected: 04/29/16 14:02 Matrix: Water

Method: 8270D - Semivola Analyte		mpounds Qualifier	(GC/MS) (Co	ntinued MDL	•	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7	Qualifier	1.7		ug/L		05/05/16 08:14		1
3 & 4 Methylphenol	0.93	1	1.7		ug/L		05/05/16 08:14		
Naphthalene	< 0.85		0.85		ug/L		05/05/16 08:14		········· 1
2-Nitroaniline	<4.3		4.3		ug/L		05/05/16 08:14		1
3-Nitroaniline	<8.5		8.5		ug/L		05/05/16 08:14		
4-Nitroaniline	<8.5		8.5		ug/L		05/05/16 08:14		
Nitrobenzene	<0.85		0.85		ug/L		05/05/16 08:14		1
2-Nitrophenol	<8.5		8.5		ug/L			05/13/16 03:06	1
4-Nitrophenol	<17		17		ug/L			05/13/16 03:06	
N-Nitrosodi-n-propylamine	< 0.43		0.43		ug/L			05/13/16 03:06	1
N-Nitrosodiphenylamine	<0.45		0.45		ug/L			05/13/16 03:06	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7		ug/L			05/13/16 03:06	' 1
Pentachlorophenol	<17		17		ug/L			05/13/16 03:06	1
Phenanthrene	<0.85		0.85		ug/L ug/L			05/13/16 03:06	1
Phenol	<4.3		4.3		ug/L ug/L			05/13/16 03:06	1
	<0.85		0.85		-			05/13/16 03:06	
Pyrene	<8.5		8.5		ug/L				1
2,4,5-Trichlorophenol					ug/L			05/13/16 03:06	1
2,4,6-Trichlorophenol	<4.3	- -	4.3		ug/L			05/13/16 03:06	1
Benzaldehyde	-<17	" R	17		ug/L			05/13/16 03:06	1
Caprolactam	<8.5		8.5		ug/L			05/13/16 03:06	1
Atrazine	<4.3		4.3		ug/L			05/13/16 03:06	1
1,1'-Biphenyl	<4.3		4.3	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	66		30 - 123				05/05/16 08:14	05/13/16 03:06	1
2-Fluorophenol (Surr)	67		30 - 110				05/05/16 08:14	05/13/16 03:06	1
Nitrobenzene-d5 (Surr)	72		33 - 139				05/05/16 08:14	05/13/16 03:06	1
Phenol-d5 (Surr)	53		20 - 100				05/05/16 08:14	05/13/16 03:06	1
Terphenyl-d14 (Surr)	99		42 - 150				05/05/16 08:14	05/13/16 03:06	1
2,4,6-Tribromophenol (Surr)	89		30 - 150				05/05/16 08:14	05/13/16 03:06	1
Method: 8081B - Organoch	nlorine Pesticid	es (GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.042		0.042	0.0055	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-BHC	< 0.042		0.042	0.0027	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-Chlordane	<0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 17:11	1
beta-BHC	<0.042		0.042	0.011			05/02/16 16:20	05/03/16 17:11	1
4,4'-DDD	<0.042		0.042	0.014	-			05/03/16 17:11	1
4,4'-DDE	<0.042		0.042	0.0040	-			05/03/16 17:11	1
4,4'-DDT	<0.042		0.042	0.0033				05/03/16 17:11	1
delta-BHC	<0.042		0.042	0.011	-		05/02/16 16:20		1
Dieldrin	<0.042		0.042	0.013	-			05/03/16 17:11	1
Endosulfan I	<0.042		0.042	0.0043				05/03/16 17:11	
	<0.042		0.042	0.0029	-			05/03/16 17:11	1
Endosultan II	-0.072				-		05/02/16 16:20		1
	<0.043		U UV3	0.012					
Endosulfan sulfate	<0.042		0.042	0.012					
Endosulfan sulfate Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan sulfate Endrin Endrin aldehyde	<0.042 <0.042		0.042 0.042	0.015 0.0086	ug/L ug/L		05/02/16 16:20 05/02/16 16:20	05/03/16 17:11 05/03/16 17:11	1
Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC (Lindane)	<0.042		0.042	0.015	ug/L ug/L ug/L		05/02/16 16:20 05/02/16 16:20 05/02/16 16:20	05/03/16 17:11	1

05/02/16 16:20 05/03/16 17:11

0.042

< 0.042

0.0075 ug/L

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: MW-8-GW-04292016	Lab Sample ID: 500-110948-6
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Date Collected: 04/29/16 14:02 Matrix: Water Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.042		0.042	0.014			05/02/16 16:20	05/03/16 17:11	
leptachlor epoxide	<0.042		0.042	0.014			05/02/16 16:20	05/03/16 17:11	,
Nethoxychlor	<0.083		0.083	0.024	•		05/02/16 16:20	05/03/16 17:11	
oxaphene	<0.42		0.42		ug/L			05/03/16 17:11	1
	0.4								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
OCB Decachlorobiphenyl Tetrachloro-m-xylene	82 67		30 - 143 30 - 120				05/02/16 16:20	05/03/16 17:11 05/03/16 17:11	1
etracriioro-m-xyrene	07		30 - 120				03/02/10 10.20	03/03/10 17.11	,
lethod: 8082A - Polychlorina				_		_			
nalyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
CB-1016	<0.42		0.42	0.070	_		05/02/16 16:20	05/03/16 18:23	1
CB-1221	<0.42		0.42		ug/L		05/02/16 16:20	05/03/16 18:23	1
CB-1232	<0.42		0.42		ug/L		05/02/16 16:20	05/03/16 18:23	1
CB-1242	<0.42		0.42		ug/L		05/02/16 16:20	05/03/16 18:23	1
CB-1248	<0.42		0.42		ug/L		05/02/16 16:20	05/03/16 18:23	1
CB-1254	<0.42		0.42		ug/L		05/02/16 16:20	05/03/16 18:23	1
CB-1260	<0.42		0.42	0.073	ug/L		05/02/16 16:20	05/03/16 18:23	1
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
etrachloro-m-xylene	77		30 - 127				05/02/16 16:20	05/03/16 18:23	
CB Decachlorobiphenyl	75		30 - 150				05/02/16 16:20	05/03/16 18:23	1
lethod: 6010C - Metals (ICP)									
nalyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
luminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:51	1
ntimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:51	1
rsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
arium	0.65		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
eryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:51	1
admium	0.0014	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:51	1
alcium	110	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:51	1
hromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
obalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:51	1
opper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
on	10	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:51	1
ead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
agnesium	91		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:51	1
anganese	0.16		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:51	1
ickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
otassium	38		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:51	1
elenium	<0.010		0.010	0.0046			05/02/16 09:28	05/03/16 19:51	1
lver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:51	1
odium	240		1.0		mg/L		05/02/16 09:28	05/03/16 19:51	1
nallium	<0.010		0.010	0.0028			05/02/16 09:28	05/03/16 19:51	1
anadium	< 0.0050		0.0050	0.0019	_		05/02/16 09:28	05/03/16 19:51	1
inc	<0.020		0.020	0.0090	-			05/03/16 19:51	
Method: 6010C - Metals (ICP)	. Dissolved								
nalyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062			05/02/16 09:28	05/03/16 19:57	1

TestAmerica Chicago

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Method: 6010C - Metals (ICF Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Barium	0.63		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cadmium	0.0014	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:57	1
Calcium	110	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:57	1
Chromium	<0.010	_	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:57	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Iron	10	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:57	1
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Magnesium	90		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Manganese	0.16		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Potassium	37		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:57	1
Selenium	< 0.010	JB UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:57	1
Sodium	230		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:57	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:57	1
Zinc	<0.020	UJ	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:57	1
Method: 7470A - Mercury (C	,								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:47	1
Method: 7470A - Mercury (C	,								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:49	1
General Chemistry									
Analyte		Qualifier	RL -		Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.30	J	1.0		mg/L			05/03/16 05:52	1
Sulfate	<5.0		5.0		mg/L			05/06/16 09:22	1
Total Organic Carbon - Duplicate			1.0		mg/L			05/13/16 23:59	1
Nitrogen, Nitrate	<0.10		0.10	0.045	_			05/13/16 15:09	1
Total Suspended Solids	23		5.0		mg/L			05/03/16 11:52	1
Ammonia		P	2.0		mg/L		05/11/16 18:12	05/12/16 19:31	10
Nitrogen, Nitrite	0.034		0.020	0.0032	-			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:42	1

Client: ARCADIS U.S., Inc.

Project/Site: Lake Calumet Cluster Site

Lab Sample ID: 500-110948-7

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016) Matrix: Water

Date Collected: 04/29/16 00:00 Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	30		5.0	1.7	ug/L			05/12/16 21:52	
Benzene	7.0		0.50	0.15	ug/L			05/12/16 21:52	
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:52	
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 21:52	
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 21:52	
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:52	
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:52	
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 21:52	
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:52	
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 21:52	
cis-1,2-Dichloroethene	4.5		1.0	0.41	ug/L			05/12/16 21:52	
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:52	
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 21:52	
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:52	
1,2-Dichlorobenzene	2.5		1.0	0.33	ug/L			05/12/16 21:52	
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:52	
1,4-Dichlorobenzene	13		1.0	0.36	ug/L			05/12/16 21:52	
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 21:52	
I,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:52	
1,2-Dichloroethane	1.4		1.0	0.39	ug/L			05/12/16 21:52	
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:52	
Ethylbenzene	97		0.50	0.18	ug/L			05/12/16 21:52	
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 21:52	
sopropylbenzene	6.6		1.0	0.39	ug/L			05/12/16 21:52	
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:52	
Methylcyclohexane	1.1		1.0	0.32	ug/L			05/12/16 21:52	
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:52	
Methyl Ethyl Ketone	13	J	5.0	2.1	ug/L			05/12/16 21:52	
methyl isobutyl ketone	27	J	5.0	2.2	ug/L			05/12/16 21:52	
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:52	
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:52	
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:52	
Toluene	150		0.50	0.15	ug/L			05/12/16 21:52	
rans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:52	
rans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:52	
I,2,4-Trichlorobenzene	<1.0		1.0		ug/L			05/12/16 21:52	
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:52	
1,1,2-Trichloroethane	<1.0		1.0		ug/L			05/12/16 21:52	
Trichloroethene	< 0.50		0.50		ug/L			05/12/16 21:52	
Trichlorofluoromethane	<1.0		1.0		ug/L			05/12/16 21:52	
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0		ug/L			05/12/16 21:52	
Vinyl chloride	3.7		0.50		ug/L			05/12/16 21:52	

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Client Sample ID: DUP-2 (04292016) Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00 Date Received: 04/30/16 07:34

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97	71 - 120		05/12/16 21:52	1
Dibromofluoromethane	96	70 - 120		05/12/16 21:52	1
1,2-Dichloroethane-d4 (Surr)	95	71 - 127		05/12/16 21:52	1
Toluene-d8 (Surr)	100	75 - 120		05/12/16 21:52	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	440	D	5.0	1.1	ug/L			05/12/16 22:18	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		71 - 120			-		05/12/16 22:18	5
Dibromofluoromethane	99		70 - 120					05/12/16 22:18	5
1,2-Dichloroethane-d4 (Surr)	100		71 - 127					05/12/16 22:18	5
Toluene-d8 (Surr)	100		75 - 120					05/12/16 22:18	5

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Anthracene	<8.4		8.4	2.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-ethylhexyl) phthalate	88	D	84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Bromophenyl phenyl ether	<42		42	4.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Carbazole	<42		42	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloroaniline	<84 🕌	UJ	84	17	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chlorophenyl phenyl ether	<42		42	5.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Chrysene	<4.2		4.2	0.58	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dimethylphenol	110 🗡	′ JD	84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Di-n-butyl phthalate	<42		42	6.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	-		05/05/16 08:14	05/13/16 10:21	10
Di-n-octyl phthalate	<84		84		ug/L		05/05/16 08:14	05/13/16 10:21	10

TestAmerica Chicago

Matrix: Water

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-2 (04292016) Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00 Date Received: 04/30/16 07:34

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Fluorene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachloroethane	<42		42	5.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 10:21	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylnaphthalene	6.6	D	4.2	0.55	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylphenol	19	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
3 & 4 Methylphenol	90	D	17	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Naphthalene	16	D	8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 10:21	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenanthrene	<8.4		8.4	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenol	38	JD	42	5.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pyrene	<8.4		8.4	3.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzaldehyde	~170	→ R	170	130	-ug/L		05/05/16 08:14	05/13/16 10:21	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 10:21	10
Atrazine	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	99		30 - 123				05/05/16 08:14	05/13/16 10:21	10
2-Fluorophenol (Surr)	67		30 - 110				05/05/16 08:14	05/13/16 10:21	10
Nitrobenzene-d5 (Surr)	88		33 - 139				05/05/16 08:14	05/13/16 10:21	10
Phenol-d5 (Surr)	60		20 - 100				05/05/16 08:14	05/13/16 10:21	10
Terphenyl-d14 (Surr)	113		42 - 150				05/05/16 08:14	05/13/16 10:21	10
0.40 = "							05/05/40 00 11	05/40/40 46 64	

Method: 8081B - Organochlorine Pesticid	oc (CC)

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2,4,6-Tribromophenol (Surr)

Wethou. Out ib - Organo	ciliornie resucides (GC)							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043	0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-BHC	<0.043	0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-Chlordane	<0.043	0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 17:30	1
beta-BHC	<0.043	0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDD	<0.043	0.043	0.014	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDE	<0.043	0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDT	<0.043	0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 17:30	1
delta-BHC	<0.043	0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1

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TestAmerica Chicago

05/05/16 08:14 05/13/16 10:21

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Matrix: Water

Client: ARCADIS U.S., Inc. TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Calcium

Client Sample ID: DUP-2 (04292016) Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00 **Matrix: Water**

Method: 8081B - Organoc						_			 –
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.043		0.043	0.014	-		05/02/16 16:20	05/03/16 17:30	
Endosulfan I	<0.043		0.043	0.0045	-		05/02/16 16:20	05/03/16 17:30	,
Endosulfan II	<0.043		0.043	0.0030	-		05/02/16 16:20	05/03/16 17:30	•
Endosulfan sulfate	<0.043		0.043	0.013	•		05/02/16 16:20	05/03/16 17:30	
Endrin	<0.043		0.043	0.015	-		05/02/16 16:20	05/03/16 17:30	
Endrin aldehyde	<0.043		0.043	0.0089	_		05/02/16 16:20	05/03/16 17:30	
Endrin ketone	<0.043		0.043	0.018	-		05/02/16 16:20	05/03/16 17:30	
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 17:30	
gamma-Chlordane	<0.043		0.043	0.0078	_		05/02/16 16:20	05/03/16 17:30	
Heptachlor	<0.043		0.043	0.015	-		05/02/16 16:20	05/03/16 17:30	
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	
Methoxychlor	<0.087		0.087	0.025	ug/L		05/02/16 16:20	05/03/16 17:30	
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:30	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
DCB Decachlorobiphenyl	35		30 - 143				05/02/16 16:20	05/03/16 17:30	
Tetrachloro-m-xylene	88		30 - 120				05/02/16 16:20	05/03/16 17:30	
Method: 8082A - Polychlo	rinated Biphen	/Is (PCBs)	by Gas Chr	omatogr	aphv				
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1016	< 0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1221	< 0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1221	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1232	- 5.7	_	0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1232	4.0		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1242	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1242	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1248	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1248	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1254	<0.43		0.43		ug/L		05/02/16 16:20	05/03/16 18:39	
PCB-1254	<0.43		0.43		ug/L		05/02/16 16:20		
PCB-1260	<0.43		0.43	0.076	_			05/03/16 18:39	
PCB-1260	<0.43		0.43	0.076	-			05/03/16 18:39	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Tetrachloro-m-xylene	46		30 - 127				05/02/16 16:20	05/03/16 18:39	
Tetrachloro-m-xylene	33		30 - 127				05/02/16 16:20		
DCB Decachlorobiphenyl	24	X	30 - 150				05/02/16 16:20	05/03/16 18:39	
DCB Decachlorobiphenyl	30		30 - 150					05/03/16 18:39	
Method: 6010C - Metals (I	CD)								
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	0.51		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:02	
Antimony	<0.020		0.020	0.0064	-		05/02/16 09:28	05/03/16 20:02	
Arsenic	0.023		0.010	0.0031	-		05/02/16 09:28	05/03/16 20:02	
Barium	0.31		0.010	0.0022	-		05/02/16 09:28	05/03/16 20:02	
Beryllium	<0.0040		0.0040	0.00085	-		05/02/16 09:28	05/03/16 20:02	
Cadmium	0.0022		0.0020	0.00094	-		05/02/16 09:28	05/03/16 20:02	
	0.0022			J.00004	₉ , <u>-</u>				

TestAmerica Chicago

05/02/16 09:28 05/03/16 20:02

0.20

0.059 mg/L

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Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-2 (04292016) Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00 Matrix: Water Date Received: 04/30/16 07:34

Analyte	etals (ICP) (Continued) Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.14		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	
Cobalt	0.036		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 20:02	
Copper	0.013		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:02	
ron	2.2	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 20:02	
Lead	0.13		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	
Magnesium	29		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 20:02	
Manganese	0.0093	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 20:02	
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:02	
Potassium	610		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 20:02	
Selenium	< 0.010 -0.0093	JB UB	0.010	0.0046	_		05/02/16 09:28	05/03/16 20:02	
Silver	<0.0050	02	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 20:02	
Sodium	3300		100		mg/L		05/02/16 09:28	05/05/16 15:59	100
Γhallium	<0.010		0.010	0.0028			05/02/16 09:28	05/03/16 20:02	
Vanadium	0.057		0.0050	0.0019	-		05/02/16 09:28	05/03/16 20:02	
Zinc	0.18		0.020	0.0090			05/02/16 09:28	05/03/16 20:02	
Mathada CO400	otala (IOD) - Diagahaad								
Metnod: 6010C - M6 Analyte	etals (ICP) - Dissolved Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Aluminum	0.27		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:07	
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 20:07	
Arsenic	0.021		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:07	
Barium	0.29		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	
Beryllium	<0.0040		0.0040	0.00085	-		05/02/16 09:28	05/03/16 20:07	
Cadmium	0.0014	J	0.0020	0.00094	-		05/02/16 09:28	05/03/16 20:07	
Calcium	26	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 20:07	
Chromium	0.13	_	0.010	0.0024	_		05/02/16 09:28	05/03/16 20:07	
Cobalt	0.034		0.0050	0.00096	_		05/02/16 09:28	05/03/16 20:07	
Copper	0.0048	J	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	
lron	2.0	J.	0.20		mg/L		05/02/16 09:28	05/03/16 20:07	
Lead	0.032	•	0.0050	0.0024	_		05/02/16 09:28	05/03/16 20:07	
Magnesium	28		0.10	0.034	-		05/02/16 09:28	05/03/16 20:07	
Manganese	0.0084	J	0.010	0.0034	_		05/02/16 09:28	05/03/16 20:07	
Nickel	0.14		0.010	0.0031	_		05/02/16 09:28	05/03/16 20:07	
Potassium	590		0.50		mg/L		05/02/16 09:28	05/03/16 20:07	
Selenium	< 0.010 - 0.0078	JB UB	0.010	0.0046	-		05/02/16 09:28	05/03/16 20:07	
Silver	<0.0050		0.0050	0.0013	_			05/03/16 20:07	
Sodium	3200		100	43	mg/L		05/02/16 09:28	05/05/16 16:03	100
Γhallium	<0.010		0.010	0.0028	_			05/03/16 20:07	
Vanadium	0.050		0.0050	0.0019	-			05/03/16 20:07	
Zinc	0.060	J	0.020	0.0090	_			05/03/16 20:07	
Method: 7470A - Me	roury (CVAA)								
Metriod: 7470A - Me Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mercury	0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:50	
Method: 7470A - Ma	ercury (CVAA) - Disso	lved							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011			05/04/16 15:00		

Client: ARCADIS U.S., Inc.

TestAmerica Job ID: 500-110948-1

Project/Site: Lake Calumet Cluster Site

Client Sample ID: DUP-2 (04292016) Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00 Matrix: Water

Date Received: 04/30/16 07:34

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	4.5		1.0	0.22	mg/L			05/03/16 05:55	1
Sulfate	63		20	8.0	mg/L			05/06/16 09:06	4
Total Organic Carbon - Duplicates	350		20	4.6	mg/L			05/14/16 00:19	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	19		5.0	1.6	mg/L			05/03/16 11:53	1
Ammonia	770	×	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:17	200
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:44	2